

EXHIBIT 63

Anne McTiernan, Ph.D

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW JERSEY

)
IN RE: JOHNSON & JOHNSON TALCUM)
POWDER PRODUCTS MARKETING, SALES)
PRACTICES, AND PRODUCTS LIABILITY) MDL No. 2738 (FLW)(LHG)
LITIGATION)
)
)

VIDEOTAPED DEPOSITION OF ANNE MCTIERNAN, PH.D.

January 28, 2019

Seattle, Washington

Anne McTiernan, Ph.D

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 13 Exhibit No. 1A Plaintiff's steering 21
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 21 dated 11/16/18.
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 24 Exhibit No. 4 World Cancer Research Fund 69
 25 and American Institute for
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22 Also present: Anthony Bocci, Videographer
 23
 24
 25

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 8 web page excerpt, "Myths and
 9 controversies about what
 10 causes cancer."
 11 Exhibit No. 8 American Institute for Cancer 103
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<p>1 EXHIBIT INDEX (CONTINUED)</p> <p>2</p> <p>3 Exhibit No. 25 Rule 26 expert report of Anne 304 McTiernan, MD, PHD, dated November 16, 2018.</p> <p>4</p> <p>5 Exhibit No. 26 "Draft screening assessment," 306 dated December 2018.</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 MS. GARBER: Good morning. Cynthia</p> <p>2 Garber on behalf of the plaintiffs.</p> <p>3 MR. GOLOMB: Richard Golomb on behalf</p> <p>4 of Plaintiffs.</p> <p>5 MS. ERFLE: Nancy Erfle on behalf of</p> <p>6 Imerys Talc America.</p> <p>7 MR. LOCKE: Tom Locke from Personal</p> <p>8 Care Products Council.</p> <p>9 MR. ANDERTON: Michael Anderton for</p> <p>10 PTI Royston, LLC and PTI Union, LLC.</p> <p>11 MR. HALPERIN: Benjamin Halperin for</p> <p>12 Johnson & Johnson.</p> <p>13 MS. GUTIERREZ: Susan Gutierrez for</p> <p>14 Johnson & Johnson.</p> <p>15 MR. WILLIAMS: And Bart Williams for</p> <p>16 Johnson & Johnson.</p> <p>17 VIDEOGRAPHER: Thank you.</p> <p>18 Will the court reporter now please swear in the</p> <p>19 witness.</p> <p>20</p> <p>21 ANNE MCTIERNAN, PH.D., having been first duly sworn</p> <p>22 by the Certified Court Reporter,</p> <p>23 testified as follows:</p> <p>24 /////</p> <p>25 /////</p>

3 (Pages 6 to 9)

Anne McTiernan, Ph.D

<p style="text-align: right;">Page 10</p> <p>1 EXAMINATION</p> <p>2 BY MR. WILLIAMS:</p> <p>3 Q Good morning, Dr. McTiernan.</p> <p>4 A Good morning.</p> <p>5 Q We just met this morning. My name is Bart Williams, and</p> <p>6 I represent Johnson & Johnson in this matter, which is</p> <p>7 pending in the District of New Jersey Federal Court.</p> <p>8 Are you aware of that?</p> <p>9 A Yes.</p> <p>10 Q Have you ever had your deposition taken before?</p> <p>11 A Never.</p> <p>12 Q The way this will work is I'll ask you questions.</p> <p>13 Counsel may interpose objections to my questions. There</p> <p>14 will be no judge here ruling on the objections, and after</p> <p>15 the objections, if any, you are supposed to answer the</p> <p>16 question.</p> <p>17 Do you understand that?</p> <p>18 A Yes.</p> <p>19 Q My understanding is that you have provided us with a USB</p> <p>20 drive; is that correct?</p> <p>21 A Michelle Parfitt provided you with that drive, yes.</p> <p>22 Q Are you aware of what's on that drive?</p> <p>23 A Yes. It's all the documents that I've used in forming my</p> <p>24 opinion.</p> <p>25 Q Are all of the files on the USB drive documents that you</p>	<p style="text-align: right;">Page 12</p> <p>1 MS. PARFITT: If I may, I am not sure</p> <p>2 that Dr. McTiernan knows that.</p> <p>3 The additional materials, they are not, to my</p> <p>4 knowledge, on that thumb drive.</p> <p>5 It was a list of some additional materials. I'm not</p> <p>6 sure that she's reviewed them all, and please feel free</p> <p>7 to make that inquiry, if you will, but I don't believe,</p> <p>8 Mr. Williams, they may be included on that thumb drive.</p> <p>9 That thumb drive should include the report, the</p> <p>10 references to the report.</p> <p>11 MR. WILLIAMS: Okay.</p> <p>12 Q (By Mr. Williams) Dr. McTiernan, when were you first</p> <p>13 approached about any involvement in talcum powder</p> <p>14 litigation?</p> <p>15 A It should have been 2016.</p> <p>16 Q And by whom were you approached?</p> <p>17 A By Ms. Parfitt.</p> <p>18 Q Michelle Parfitt, counsel who is--</p> <p>19 A Yes.</p> <p>20 Q One thing I should have told you, in order for the court</p> <p>21 reporter to take down everything that is said, you need</p> <p>22 to wait until I'm completely finished--</p> <p>23 A Oh, sorry.</p> <p>24 Q --with my question.</p> <p>25 You should take a pause and then answer the</p>
<p style="text-align: right;">Page 11</p> <p>1 considered in connection with your opinions in this case?</p> <p>2 A Yes.</p> <p>3 Q Are there any other files on the USB drive?</p> <p>4 A Not to my knowledge there are no other files.</p> <p>5 Q Can you be a little bit more particular about what types</p> <p>6 of documents, categories of documents, are contained on</p> <p>7 the drive?</p> <p>8 A So these will be scientific manuscripts published in</p> <p>9 peer-reviewed journals.</p> <p>10 They will be some expert testimony.</p> <p>11 There was government reports, and I don't have the</p> <p>12 full list right in front of me, so there are hundreds of</p> <p>13 these things, but in general classifications, I think</p> <p>14 that is-- that covers it generally.</p> <p>15 Q Those are all the things you recall at this time?</p> <p>16 A That's what I recall.</p> <p>17 My report should be on there as well, my CV, and</p> <p>18 government reports of-- other expert reports-- if I</p> <p>19 mentioned that.</p> <p>20 Q Let me stop you there.</p> <p>21 A Yeah.</p> <p>22 Q Does the USB drive contain all of the materials that were</p> <p>23 just recently produced to the defense in the case a few</p> <p>24 days ago, which were entitled, "Additional materials"</p> <p>25 that you had reviewed?</p>	<p style="text-align: right;">Page 13</p> <p>1 question, okay?</p> <p>2 A Mm-hm, okay.</p> <p>3 Q Otherwise, she has to cut off part of the question, write</p> <p>4 down your partial answer, and then the rest of my</p> <p>5 question.</p> <p>6 Do you understand that?</p> <p>7 A Okay, yes.</p> <p>8 Q So the first person who approached you was Michelle</p> <p>9 Parfitt?</p> <p>10 A Yes.</p> <p>11 Q Do you remember--</p> <p>12 A For this-- yes, for this litigation, yes.</p> <p>13 Q When in 2016 did Ms. Parfitt approach you?</p> <p>14 A I don't have that in my head.</p> <p>15 We should have a record of that first interaction.</p> <p>16 Q I will just get your memory for now.</p> <p>17 Was it winter, spring, summer or fall?</p> <p>18 A It would be late summer.</p> <p>19 Q Did Ms. Parfitt contact you at your place of business?</p> <p>20 A She approached me first by an e-mail at my institutional</p> <p>21 e-mail address, yes.</p> <p>22 Q And what is that e-mail address?</p> <p>23 A At that time it was probably still amctiern@fhcrc.</p> <p>24 My institution has changed the middle part to</p> <p>25 FredHutch, so I believe she did the first one.</p>

4 (Pages 10 to 13)

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<p style="text-align: right;">Page 14</p> <p>1 Either one goes to the same place.</p> <p>2 Q Have you known Ms. Parfitt or any of the other</p> <p>3 plaintiffs' lawyers prior to their contacting you?</p> <p>4 A No, I did not.</p> <p>5 Q How long after Ms. Parfitt first contacted you did you</p> <p>6 agree to work with them in connection with the talcum</p> <p>7 powder litigation?</p> <p>8 A It was approximately two months, and my institution</p> <p>9 requires that I get permission for doing such consulting,</p> <p>10 so the process took approximately two months before I</p> <p>11 received approval.</p> <p>12 Q As of late summer 2016, when Ms. Parfitt first contacted</p> <p>13 you, what institution are you talking about?</p> <p>14 A Oh, so Fred Hutch Cancer Research Center in Seattle.</p> <p>15 Q And if it took two months, that would mean that it was</p> <p>16 late summer, early fall when you had received approval;</p> <p>17 is that correct?</p> <p>18 A I believe, yes.</p> <p>19 Q And that's late summer, early fall of 2016, right?</p> <p>20 A I believe, yes.</p> <p>21 Q How much per hour are you billing for the literature</p> <p>22 review and preparation for your report in this matter?</p> <p>23 A That was \$450 an hour.</p> <p>24 Q At what rate are you charging for your time spent</p> <p>25 providing deposition testimony?</p>	<p style="text-align: right;">Page 16</p> <p>1 A Yes.</p> <p>2 Q When did you first see this?</p> <p>3 A Approximately a month ago.</p> <p>4 Q In response to this deposition notice, which lists</p> <p>5 certain categories of documents, have you brought any</p> <p>6 documents with you here today?</p> <p>7 A We have documents for reports that were available only</p> <p>8 recently, so too recent to have them on the thumb drive,</p> <p>9 so these include the Health Canada report, weight of</p> <p>10 evidence, the screening-- the draft screening assessment,</p> <p>11 risk management scope, information sheet, key messages,</p> <p>12 and a "Draft systematic review of meta-analysis" by</p> <p>13 Taher, so it's a signed manuscript.</p> <p>14 Q Anything else?</p> <p>15 A These others are all in my list of documents. These are</p> <p>16 just copies of them.</p> <p>17 Q So just let me clear that up.</p> <p>18 You have just mentioned that there are some reports</p> <p>19 in--</p> <p>20 A The Health Canada report.</p> <p>21 Q Let me just take them one at a time.</p> <p>22 A I'm sorry.</p> <p>23 Q You listed the Health Canada report, correct?</p> <p>24 A Yes.</p> <p>25 Q Something called the draft screening assessment?</p>
<p style="text-align: right;">Page 15</p> <p>1 A \$650.</p> <p>2 Q Is that the same amount that you would charge for hearing</p> <p>3 testimony if you were to testify at the Daubert, and</p> <p>4 that's D-A-U-B-E-R-T, hearing in the summer of 2019?</p> <p>5 A Yes.</p> <p>6 Q Do you charge for travel related to your work as an</p> <p>7 expert witness, separate and apart from any work that you</p> <p>8 may do while traveling?</p> <p>9 A I have not previously been an expert witness, so I can't</p> <p>10 give you an answer on what I usually do.</p> <p>11 Q So this is the very first time in your career where you</p> <p>12 have served as an expert witness; is that correct?</p> <p>13 A That's right.</p> <p>14 (Exhibit No. 1 marked</p> <p>15 for identification.)</p> <p>16</p> <p>17 Q (By Mr. Williams) We have marked as Deposition Exhibit</p> <p>18 No. 1 the deposition notice, and we will hand that out to</p> <p>19 you through your counsel.</p> <p>20 MS. PARFITT: I believe you have that,</p> <p>21 Anthony, the first notice.</p> <p>22 Q (By Mr. Williams) Do you have Exhibit No. 1, the</p> <p>23 deposition notice, in front of you?</p> <p>24 A Yes.</p> <p>25 Q Is this something you have seen before?</p>	<p style="text-align: right;">Page 17</p> <p>1 A So these are all part of the Health Canada report.</p> <p>2 These are the components of it.</p> <p>3 A screening assessment document, weight of evidence</p> <p>4 document, a document called "Risk management scope," one</p> <p>5 called-- the title is, "Talc - potential risk of lung</p> <p>6 effects and ovarian cancer." I am calling it key</p> <p>7 messages because that's the first title underneath that.</p> <p>8 There's a talc information sheet.</p> <p>9 And a government of Canada talc sheet.</p> <p>10 It looks like it's a public messages sheet.</p> <p>11 The last thing is a systematic review of</p> <p>12 meta-analysis of the association between perineal use of</p> <p>13 talc and risk of ovarian cancer by Taher, et al.</p> <p>14 Q And let me ask you to go a little bit more slowly when</p> <p>15 you read today so that the court reporter can get it</p> <p>16 down.</p> <p>17 Is that okay with you?</p> <p>18 A Yes.</p> <p>19 Q Is it accurate to say that the items you have just listed</p> <p>20 were not in your possession at the time that you prepared</p> <p>21 your report that has been provided in this case?</p> <p>22 A That is correct.</p> <p>23 They were published after that period.</p> <p>24 Q Is it accurate to say that none of the materials that you</p> <p>25 have in front of you now were able to inform the opinions</p>

5 (Pages 14 to 17)

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<p style="text-align: right;">Page 18</p> <p>1 that you expressed in the report, which predated your</p> <p>2 receipt of those materials?</p> <p>3 A The Health Canada report, that is true for.</p> <p>4 However, the other documents that I have here, one</p> <p>5 is a paper that I cited from Blount.</p> <p>6 One is information from the FDA website, which is--</p> <p>7 I was able to access before doing my report.</p> <p>8 Then the last thing is-- I'm sorry, it's a</p> <p>9 deposition of Dr. Blount held last April, so I had access</p> <p>10 to that earlier as well.</p> <p>11 Q Let's do this, we previously went through a list of</p> <p>12 materials, most of which related to the Health Canada</p> <p>13 report.</p> <p>14 Do you remember that?</p> <p>15 A Yes.</p> <p>16 Q Other than that set of materials that you previously</p> <p>17 described, is everything in the blue folder that's in</p> <p>18 front of you, that you have brought with you today, a</p> <p>19 duplicate of another report that has already been</p> <p>20 produced to us?</p> <p>21 A Yes.</p> <p>22 There was also one list here of additional</p> <p>23 materials, so that should have been-- additional</p> <p>24 materials to Dr. McTiernan, and that should be in your</p> <p>25 list of what you have as well.</p>	<p style="text-align: right;">Page 20</p> <p>1 Q We will take a look at that during a break and perhaps</p> <p>2 get a copy of it.</p> <p>3 A Okay.</p> <p>4 Q When were the notes that you have written on your expert</p> <p>5 report written on the report?</p> <p>6 A In the past week.</p> <p>7 I realized, as I was reviewing and preparing, that I</p> <p>8 had not used a program that would give the full name of</p> <p>9 the references, so to aid in my review, I wrote in the</p> <p>10 first author of the documents, the manuscripts that I was</p> <p>11 referring to.</p> <p>12 Everything listed here is-- that I've written is the</p> <p>13 first author of an article, and then I've also underlined</p> <p>14 a few places to jog my memory.</p> <p>15 Q Other than what you've just described, are there any</p> <p>16 other notations that appear on the report document?</p> <p>17 A No, not to my knowledge, no.</p> <p>18 Q Did you bring with you today any invoices reflecting</p> <p>19 statements that you have given to plaintiffs' counsel for</p> <p>20 payment?</p> <p>21 A I did not bring them myself, but I believe you have them.</p> <p>22 MS. PARFITT: We did-- we have them.</p> <p>23 If we can just take a look at them-- they were just</p> <p>24 sent this morning to us, to my office, so if I could have</p> <p>25 a chance to look through them, and maybe after the break</p>
<p style="text-align: right;">Page 19</p> <p>1 Q We are going to mark a copy of that additional materials</p> <p>2 list in a moment, but for now, is it accurate that at the</p> <p>3 time that you prepared your report in this case, which</p> <p>4 was submitted to us in November of 2018, you had not</p> <p>5 reviewed the additional materials list materials that you</p> <p>6 have just pointed to?</p> <p>7 A That is correct.</p> <p>8 Those were not available at that time.</p> <p>9 Q Let's mark as Exhibit No. 2 to the deposition a copy of</p> <p>10 your expert report from November of 2018.</p> <p>11 I think your counsel already has that.</p> <p>12 (Exhibit No. 2 marked</p> <p>13 for identification.)</p> <p>14</p> <p>15 Q (By Mr. Williams) Is the document marked Exhibit No. 2 a</p> <p>16 copy of the expert report that you prepared in this case?</p> <p>17 A Yes, it is.</p> <p>18 Q It's dated November 16th, 2018?</p> <p>19 A Yes.</p> <p>20 Q You have a copy of that report in front of you that you</p> <p>21 are holding right now; is that right?</p> <p>22 A Yes.</p> <p>23 Q Does the copy that you are holding right now have notes</p> <p>24 on it?</p> <p>25 A Yes, it does.</p>	<p style="text-align: right;">Page 21</p> <p>1 we can get them marked.</p> <p>2 Would that be appropriate?</p> <p>3 MR. WILLIAMS: That's fine.</p> <p>4 MS. PARFITT: The only other thing I</p> <p>5 ask, Mr. Williams, could we perhaps note the Exhibit 1A,</p> <p>6 the objection to the notice of depo?</p> <p>7 MR. WILLIAMS: Sure.</p> <p>8 MS. PARFITT: Thank you.</p> <p>9 (Exhibit No. 1A marked</p> <p>10 for identification.)</p> <p>11</p> <p>12 Q (By Mr. Williams) Your counsel-- we have premarked as</p> <p>13 Exhibit No. 1A the objections that were served by</p> <p>14 Plaintiffs' counsel to the deposition notice that we</p> <p>15 provided.</p> <p>16 Have you seen that before?</p> <p>17 It's in front of you now.</p> <p>18 A This, no, I have not.</p> <p>19 Q So you have never seen the objections?</p> <p>20 A No, I have not.</p> <p>21 Q Did counsel consult with you at all at the time that was</p> <p>22 prepared?</p> <p>23 A No.</p> <p>24 Q Let's go back to the point in time when you first spoke</p> <p>25 with plaintiffs' counsel.</p>

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<p>1 You said Ms. Parfitt reached out to you by e-mail at</p> <p>2 your institution, which was the Fred Hutch Institution;</p> <p>3 is that right?</p> <p>4 A Yes.</p> <p>5 Q Was anyone else on the phone?</p> <p>6 A No.</p> <p>7 Q How long was that call?</p> <p>8 A I don't remember.</p> <p>9 I think it was brief, but I don't remember.</p> <p>10 Q And you said "I think" that it took a few months for the</p> <p>11 process at your institution to be completed; is that</p> <p>12 right?</p> <p>13 A Yes.</p> <p>14 Q How long after that first approach by Ms. Parfitt in the</p> <p>15 summer, late summer, of 2016 did you decide that you</p> <p>16 would in fact want to serve as an expert in this matter?</p> <p>17 A I decided within a week that I would be interested, but I</p> <p>18 am required to do this process at my institution which</p> <p>19 involves informing my division director and the senior</p> <p>20 vice presidents of the institution as well as the</p> <p>21 president, and in aiding that, our legal counsel reviews</p> <p>22 all of these requests to do such consulting.</p> <p>23 So that process happened to take a while.</p> <p>24 This time, I'm not sure. I think somebody was on</p> <p>25 vacation, so that's why it took two months, so during--</p>	<p>1 Q When you say you did preliminary searches on Medline, can</p> <p>2 you recall any articles that you came up with?</p> <p>3 A I previously had already reviewed for the New York</p> <p>4 Times-- when they contacted me about my scientific</p> <p>5 opinion or my clinical opinion of this matter, I had been</p> <p>6 given two of the cohort study papers, one by Gertig, et</p> <p>7 al., and one by Houghton, et al., and so I briefly</p> <p>8 reviewed those, and-- as well as the Terry case-control</p> <p>9 study in order to talk with the New York Times, so I knew</p> <p>10 about those papers.</p> <p>11 In the epidemiology field, we often see things over</p> <p>12 time.</p> <p>13 This has been something that has been studied for</p> <p>14 quite a few years, so I've been aware of the issue but</p> <p>15 have not done a systematic review and not done a causal</p> <p>16 analysis, was not a focus of my research at that point.</p> <p>17 Q At the time that you agreed to participate as an expert</p> <p>18 in this litigation, is it accurate to say that the</p> <p>19 studies that you had reviewed included the Terry 2013</p> <p>20 analysis, the Gertig cohort study, the Houghton cohort</p> <p>21 study, you had reviewed as all those things before you</p> <p>22 decided to participate; is that true?</p> <p>23 A I had read those, yes.</p> <p>24 Q And you can't remember anything else, as you sit here</p> <p>25 right now, that you had reviewed before you made that</p>
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<p>1 in order to start the process, I had to be interested in</p> <p>2 doing this, so that's why I did it, but I couldn't firmly</p> <p>3 say I could do it until they gave me approval.</p> <p>4 Q In that week's period of time, between the time</p> <p>5 Ms. Parfitt first contacted you and the time that you</p> <p>6 made the decision to participate in this litigation as an</p> <p>7 expert, what, if any, documents relating to talcum powder</p> <p>8 and ovarian cancer did you review?</p> <p>9 A I had already known some of the literature, some of the--</p> <p>10 for example, the pooled analysis by Terry, et al., I had</p> <p>11 already reviewed that in the past, and I think I did some</p> <p>12 preliminary searches through Medline to see what the</p> <p>13 available data were, but I did not do a systematic</p> <p>14 review.</p> <p>15 I was not able to share that with the counsel, who</p> <p>16 was Ms. Parfitt at this point, because I wasn't able to</p> <p>17 officially consult, but I was curious. I wanted to know</p> <p>18 what the data was looking like, what papers were</p> <p>19 available.</p> <p>20 Q Other than the Terry 2013 article that you mentioned and</p> <p>21 some preliminary searches that you did on Medline, is</p> <p>22 there anything else you did in that week's period of</p> <p>23 time?</p> <p>24 A In that week? I don't recall anything else in that</p> <p>25 period.</p>	<p>1 decision?</p> <p>2 A I can't remember others.</p> <p>3 Q Were there others or not?</p> <p>4 A I can't remember.</p> <p>5 I believe that I only looked at those two cohort</p> <p>6 studies and the Terry pooled analysis.</p> <p>7 Q Let me ask you to focus on Exhibit No. 2, your report.</p> <p>8 Do you have that in front of you?</p> <p>9 A Yes.</p> <p>10 Q Does that report contain all of the opinions that you</p> <p>11 intend to offer at any hearing on this matter?</p> <p>12 A Yes, unless-- so you are talking about any future-- any</p> <p>13 future questioning I face in the court?</p> <p>14 If there's more research that is published by that</p> <p>15 time, I would want to know about it to see if it affects</p> <p>16 my opinion or what the research is.</p> <p>17 As a scientist I would want to keep up to date, but</p> <p>18 for right now, this is my scientific opinion, what's in</p> <p>19 this report.</p> <p>20 Q Today is my opportunity to ask you questions about your</p> <p>21 opinions in this matter.</p> <p>22 You understand that, right?</p> <p>23 A Yes.</p> <p>24 Q Have you modified your opinions in this litigation beyond</p> <p>25 the opinions set forth in Exhibit No. 2?</p>

7 (Pages 22 to 25)

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<p style="text-align: right;">Page 26</p> <p>1 A No, I have not.</p> <p>2 Q Are there any few or additional opinions that you expect</p> <p>3 to testify to at any hearing in this matter, other than</p> <p>4 what is contained in your report, Exhibit No. 2?</p> <p>5 A Nothing that I foresee, that I expect.</p> <p>6 Q Did you personally type the report that's marked as</p> <p>7 Exhibit No. 2?</p> <p>8 A Yes, I did.</p> <p>9 Q Did anyone assist you in the preparation of your report?</p> <p>10 A The only assistance I had was occasionally if I couldn't</p> <p>11 get a paper myself, through my own institutional library,</p> <p>12 then we have an administrative assistant that I can ask</p> <p>13 for that, and I believe I asked for a couple of papers</p> <p>14 through that source.</p> <p>15 There were a couple of times when I asked</p> <p>16 Ms. Parfitt's firm if they had a paper. This was quite a</p> <p>17 few months after that period, perhaps half a year or</p> <p>18 longer by the time I asked them.</p> <p>19 Q When did you start drafting the litigation report marked</p> <p>20 as Exhibit No. 2?</p> <p>21 A That would have been winter of 2016 to spring of 2017.</p> <p>22 Q Since you typed the report yourself, am I right that you</p> <p>23 have a file of it either at home or on your office</p> <p>24 computer?</p> <p>25 A Yes, on my home computer.</p>	<p style="text-align: right;">Page 28</p> <p>1 was given approval to work on this, so anything I read</p> <p>2 before that, I did not charge my time.</p> <p>3 Q (By Mr. Williams) Is it accurate to say that the 240</p> <p>4 hours reflects all of the hours, through today, that you</p> <p>5 have spent on this matter?</p> <p>6 A Yes.</p> <p>7 Q And you broke it down to 211 hours through December 2018</p> <p>8 and another 25 hours since that time, correct?</p> <p>9 A Approximately 25 since that time, yeah.</p> <p>10 Q Let me ask you to look at your report and refer you to</p> <p>11 Pages 78 through 84.</p> <p>12 You identify 127 documents or other materials as</p> <p>13 references, correct?</p> <p>14 A Yes.</p> <p>15 Q Are those the materials that you are relying on to form</p> <p>16 the basis of your opinions in this case?</p> <p>17 A Yes, although there are different materials that I was</p> <p>18 able to review after the report was done, and they help</p> <p>19 support my opinion.</p> <p>20 Q And are those additional materials, materials that we</p> <p>21 have already discussed this morning?</p> <p>22 A Yes.</p> <p>23 Q Did the Plaintiffs' lawyers provide you with any of the</p> <p>24 references that are contained in Nos. 1 through 127?</p> <p>25 A I believe some of them they provided if it was one that I</p>
<p style="text-align: right;">Page 27</p> <p>1 Q From start to finish did you work in the same file to</p> <p>2 draft this report or did you have different files or</p> <p>3 drafts?</p> <p>4 A I copied different drafts as a way of backing up.</p> <p>5 Q Have you maintained the drafts, the iterations, as it</p> <p>6 went along?</p> <p>7 A Yes.</p> <p>8 Q How many hours would you say you have spent preparing the</p> <p>9 litigation report since the winter of 2016 to the spring</p> <p>10 of 2017 when you started writing it?</p> <p>11 A I would say approximately 240 hours.</p> <p>12 Q And on what do you base that estimate?</p> <p>13 A On invoices that I submitted through December 2018, plus</p> <p>14 an additional 25 hours since that time.</p> <p>15 Q I take it from your last answer, that up through December</p> <p>16 2018 you billed 240 hours total; is that accurate?</p> <p>17 A No.</p> <p>18 As of December 2018 I believe it was 211 hours.</p> <p>19 Q And is that 211 hours the total amount of time that you</p> <p>20 have spent grappling with the issues in this litigation</p> <p>21 or is that just the time that you have spent writing the</p> <p>22 report?</p> <p>23 MS. PARFITT: Objection; form.</p> <p>24 You may answer.</p> <p>25 THE WITNESS: It was since the time I</p>	<p style="text-align: right;">Page 29</p> <p>1 couldn't obtain on my own.</p> <p>2 A few of the mechanistic studies, I believe.</p> <p>3 Q If you can identify them by number, that would be good.</p> <p>4 A Yeah.</p> <p>5 Well, certainly some of the depositions I had no-- I</p> <p>6 did not access myself, so No. 77, 78, 79.</p> <p>7 The Longo reports, so 79 through 83.</p> <p>8 84 as well they provided.</p> <p>9 Q Anything else?</p> <p>10 A I am trying to search.</p> <p>11 They sent me some of the IARC monographs, but I had</p> <p>12 access previously to them myself, so I'm not sure which</p> <p>13 way you would want to count that, if I accessed the IARC</p> <p>14 myself online, but that-- Ms. Parfitt also sent their</p> <p>15 copy of it, so from two sources I had the same things.</p> <p>16 These are the IARC monographs, "The evaluation of</p> <p>17 carcinogenic effects," No. 40 and 42.</p> <p>18 I think there was a third IARC report.</p> <p>19 Q Would that be No. 74?</p> <p>20 A Yes.</p> <p>21 Q Other than items 40, 42, 74, and 75 through 84, are there</p> <p>22 any other materials that were provided to you by</p> <p>23 plaintiffs' counsel?</p> <p>24 A I am searching here.</p> <p>25 Some of the mechanistic studies they were able to</p>

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<p style="text-align: right;">Page 30</p> <p>1 provide when I couldn't get them myself, and some of</p> <p>2 these journals were journals that were difficult to get,</p> <p>3 so I believe 85 and 90.</p> <p>4 Q Had you identified Items 85 and 90 prior to the time they</p> <p>5 were provided to you or did Counsel simply provide them</p> <p>6 to you?</p> <p>7 A No, I don't think they-- no, they didn't simply provide</p> <p>8 them to me.</p> <p>9 At the time that I added these, these were added</p> <p>10 toward the end of the time that I was preparing the</p> <p>11 report.</p> <p>12 I was able to see some other expert reports. One</p> <p>13 was a gynecologist -- I believe it was Plunkett -- who</p> <p>14 mentioned that there were-- that-- the issue of</p> <p>15 transporting had some additional references that I did</p> <p>16 not have.</p> <p>17 I had, originally, some mechanism-related papers</p> <p>18 related to migration of talcum powder products through</p> <p>19 the vaginal tract, and I didn't-- there were some</p> <p>20 additional ones here that I had not known about.</p> <p>21 I believe Egli and Sjosten were two-- sorry, 85 and</p> <p>22 90.</p> <p>23 Q References 77 through 84 appear to be deposition</p> <p>24 transcript exhibits and expert reports in litigation.</p> <p>25 Do you see that?</p>	<p style="text-align: right;">Page 32</p> <p>1 A Yes.</p> <p>2 Q Have you read all of those items?</p> <p>3 A Not in full.</p> <p>4 Do you want me to go through them one at a time?</p> <p>5 Q Let me just ask you generally, what's the difference</p> <p>6 between the references to your report and the items</p> <p>7 listed as additional materials and data considered? Why</p> <p>8 did you spread them out like that?</p> <p>9 A These up to 127 were available at the time that I was</p> <p>10 actively writing my report.</p> <p>11 Some of these other documents came along later and</p> <p>12 were available to me, so the counsel did provide them.</p> <p>13 Some of them were-- some of them were earlier, these</p> <p>14 Fletcher papers on-- on some of the mechanistic work was</p> <p>15 done earlier.</p> <p>16 Many of these are-- to my knowledge they were</p> <p>17 exhibits that were available from the case from the law</p> <p>18 firm.</p> <p>19 One of these is a repeat. 38 was listed originally.</p> <p>20 I think there's a little bit of variability here.</p> <p>21 Q Let me stop you there for a moment.</p> <p>22 A Yes.</p> <p>23 Q Did you read each of the 113 items in their entirety?</p> <p>24 A No, I did not.</p> <p>25 Q In describing the difference between the additional</p>
<p style="text-align: right;">Page 31</p> <p>1 A Yes.</p> <p>2 Q Have you reviewed all of those transcripts?</p> <p>3 A I skimmed 77 and 78 and looked at some of the exhibits</p> <p>4 that they had with them.</p> <p>5 I skimmed Longo, but I read through the November</p> <p>6 and-- this is another one-- these are not dated here-- of</p> <p>7 February and November.</p> <p>8 Q Let's take them one at a time on Longo.</p> <p>9 No. 79 says Longo, Rigler, April 2017.</p> <p>10 Did you review that?</p> <p>11 A Only skimming that.</p> <p>12 For all of these, I looked at the summary in the</p> <p>13 beginning, which presented the numbers of samples that</p> <p>14 were tested and the numbers that were considered to have</p> <p>15 asbestos.</p> <p>16 Q So you only reviewed the summaries; is that accurate?</p> <p>17 A Summaries, yes.</p> <p>18 Q And that applies to 77 through 83?</p> <p>19 A Through 83, yes.</p> <p>20 Q Take a look at Page 84 of your litigation report.</p> <p>21 Do you have that in front of you?</p> <p>22 A Yes.</p> <p>23 Q It lists here, "Additional materials and data</p> <p>24 considered," and it lists thereafter 113 items.</p> <p>25 Do you see that?</p>	<p style="text-align: right;">Page 33</p> <p>1 materials and data considered and the 127 references that</p> <p>2 we've already gone over, is it accurate to say that the</p> <p>3 additional materials were all provided by plaintiffs'</p> <p>4 counsel?</p> <p>5 MS. PARFITT: Objection to form.</p> <p>6 THE WITNESS: It's not true.</p> <p>7 Some of these I had myself--</p> <p>8 Q (By Mr. Williams) Could you please identify all of the</p> <p>9 items on here, of the 113 items, that you had yourself</p> <p>10 prior to them being provided by plaintiffs' counsel?</p> <p>11 A Okay. No. 2, American Cancer Society, I accessed their</p> <p>12 website several times.</p> <p>13 31 is a Hartge paper on talc and ovarian cancer, so</p> <p>14 I accessed that myself.</p> <p>15 This isn't a Hartge paper title, so that's one</p> <p>16 problem, one reason I'm struggling here, so I assume that</p> <p>17 this is another review that she has written, Hartge, but</p> <p>18 I'm not sure if it's the same as the paper that I</p> <p>19 referenced as one of my case-control studies that are</p> <p>20 referenced.</p> <p>21 The same issue with 33, 34 because I did reference</p> <p>22 Henderson, these are migration papers, so I'm not sure</p> <p>23 about that.</p> <p>24 No. 37 I do consider. It was a subset of the other</p> <p>25 Huncharek review, so I did see this earlier. I just did</p>

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<p style="text-align: right;">Page 34</p> <p>1 not reference it for my report.</p> <p>2 38 is the same IARC monograph paper-- work that is</p> <p>3 referenced in the paper.</p> <p>4 Institute of Medicine I was not able to review.</p> <p>5 These other things look like they are Johnson &</p> <p>6 Johnson or-- no-- other industry documents.</p> <p>7 Q Let me stop you there for a moment.</p> <p>8 Remember, my question is simply:</p> <p>9 Of the 113 items, please just list the numbers that</p> <p>10 you had before they were provided by Plaintiffs' counsel.</p> <p>11 That's all I need.</p> <p>12 A Okay. Sorry.</p> <p>13 67 I had previously, 79, 80, 87, 88, 89, 90, 91.</p> <p>14 92 I believe I referenced earlier, so 92, 93, 94,</p> <p>15 100-- can you remind me, is this for-- to distinguish</p> <p>16 what was in my report or what I obtained on my own?</p> <p>17 Q What you obtained on your own.</p> <p>18 A Okay. 103 I obtained on my own.</p> <p>19 That's it.</p> <p>20 Q All of the items, other than those that you just listed,</p> <p>21 were provided to you by Plaintiffs' counsel, correct?</p> <p>22 A I believe so, yes.</p> <p>23 Q You did not read each and every page of the materials</p> <p>24 that were provided to you by Plaintiffs' counsel; is that</p> <p>25 true?</p>	<p style="text-align: right;">Page 36</p> <p>1 Q Is that how you phrased it, "what available evidence</p> <p>2 there was"?</p> <p>3 A As the questions came along of various-- of parts of</p> <p>4 data-- so this came up with a question of what other</p> <p>5 constituents are there in Johnson & Johnson Baby Powder</p> <p>6 and Shower to Shower, and I relied first on published</p> <p>7 data from Blount and Gordon, but I was interested in what</p> <p>8 other testing had been done to see what are the</p> <p>9 constituents, because otherwise there's no information,</p> <p>10 but it was a very general question. I didn't know what</p> <p>11 was available.</p> <p>12 Q In response to that question that you just described, the</p> <p>13 items that are listed here and the numbers that I just</p> <p>14 gave you, 40 through 47 for Imerys-- excuse me, 40</p> <p>15 through 46 for Imerys, and 47 through 65 for Johnson &</p> <p>16 Johnson, are the only documents that were provided to</p> <p>17 you?</p> <p>18 MS. PARFITT: Objection.</p> <p>19 THE WITNESS: For that, I would also</p> <p>20 have received Longo, but one issue is I don't know-- from</p> <p>21 looking at these numbers, I don't have them memorized</p> <p>22 what they are.</p> <p>23 I would have to look them up.</p> <p>24 I do know that the Longo reports are the results of</p> <p>25 testing of constituents of the products.</p>
<p style="text-align: right;">Page 35</p> <p>1 A I did not, that's true.</p> <p>2 Q Let me direct your attention to No. 47 through 65 on the</p> <p>3 list that begin with the letters JNJ.</p> <p>4 Do you see that?</p> <p>5 A Yes.</p> <p>6 Q Do you understand that these are internal Johnson &</p> <p>7 Johnson documents?</p> <p>8 Is that right?</p> <p>9 A I believe you.</p> <p>10 I don't know what they are from looking at just the</p> <p>11 numbers. I would have to reference back to my documents.</p> <p>12 Q No. 40 through 46 all start with the word Imerys,</p> <p>13 I-M-E-R-Y-S.</p> <p>14 Do you see those?</p> <p>15 A Yes.</p> <p>16 Q Do you understand those to be internal Imerys documents?</p> <p>17 A Again, I would have to look and see what they look like.</p> <p>18 Q Did you ask Plaintiffs' counsel to provide you with the</p> <p>19 Imerys and Johnson & Johnson documents?</p> <p>20 A No, I did not.</p> <p>21 Q So they just gave those to you?</p> <p>22 A I asked to see what available evidence there was, and</p> <p>23 the-- the evidence that had been collected for the case</p> <p>24 in general, so that was a very general question, and they</p> <p>25 provided these.</p>	<p style="text-align: right;">Page 37</p> <p>1 Q (By Mr. Williams) And as you sit here today, you do not</p> <p>2 know whether or not the documents that are listed in</p> <p>3 References 40 through 65 are in fact authentic documents</p> <p>4 of Johnson & Johnson or of Imerys, right, one way or the</p> <p>5 other?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 THE WITNESS: I don't have memorized</p> <p>8 what these are.</p> <p>9 Q (By Mr. Williams) Pardon me?</p> <p>10 A I don't have memorized what these are, what these numbers</p> <p>11 refer to.</p> <p>12 Q With respect to any of the internal company documents</p> <p>13 that you have reviewed from either Imerys or Johnson &</p> <p>14 Johnson, as you sit here now, you do not know whether any</p> <p>15 of those documents are in fact authentic Johnson &</p> <p>16 Johnson or Imerys documents, correct?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: When I looked at any of</p> <p>19 these documents that were provided, they had stickers on</p> <p>20 them, I noticed, like-- so exhibit numbers, so I assumed</p> <p>21 this were exhibit numbers for some litigation.</p> <p>22 That's all I know.</p> <p>23 Q (By Mr. Williams) Are you relying on any of those</p> <p>24 internal company documents to form the basis of your</p> <p>25 opinions in this case?</p>

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<p style="text-align: right;">Page 38</p> <p>1 MS. PARFITT: Objection; form, vague.</p> <p>2 THE WITNESS: I looked through them.</p> <p>3 I did not read them in enough detail to have them form</p> <p>4 the primary basis of my opinion.</p> <p>5 Q (By Mr. Williams) Do they form something other than a</p> <p>6 primary basis for your opinion?</p> <p>7 A They added to some-- to consideration of what might be</p> <p>8 contained in these products.</p> <p>9 Q Do you have any idea what percentage of the entire</p> <p>10 document production from Johnson & Johnson these 18</p> <p>11 documents comprised?</p> <p>12 A I do not.</p> <p>13 Q When you asked Counsel to provide you with what some of</p> <p>14 the evidence was with respect to the question you were</p> <p>15 being asked to consider, did you ask for both evidence</p> <p>16 that tends to show that, for example, Johnson's Baby</p> <p>17 Powder contains asbestos, and for evidence that it does</p> <p>18 not contain asbestos?</p> <p>19 A I asked about totality of evidence.</p> <p>20 I didn't use the words, "Please show me where it</p> <p>21 contains and where it doesn't."</p> <p>22 One thing I'm interested in is if something contains</p> <p>23 it, that's very concerning to me, so whether it's 50</p> <p>24 samples out of 100 that have asbestos in it, I would be</p> <p>25 concerned, but if it's only five, so even if more</p>	<p style="text-align: right;">Page 40</p> <p>1 question at issue?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: No, I don't-- well, it</p> <p>4 depends how you define a company, because occasionally if</p> <p>5 you're doing a full review of the scientific literature,</p> <p>6 you may-- for example, if you are doing a meta-analysis,</p> <p>7 they want to request data from other sources that aren't</p> <p>8 yet in the public domain, and if that study happens to be</p> <p>9 run through a company, then that could have happened.</p> <p>10 I can't say it's common.</p> <p>11 Typically we look at published data-- published</p> <p>12 scientific data from scientific opinions.</p> <p>13 Q (By Mr. Williams) When drafting a publication on a</p> <p>14 medical or a scientific question, have you ever sought</p> <p>15 internal company documents related to the subject matter?</p> <p>16 MS. PARFITT: Objection; asked and</p> <p>17 answered.</p> <p>18 THE WITNESS: So I'm curious, is that</p> <p>19 the same question as before? Did you just ask that</p> <p>20 question-- are you asking it again?</p> <p>21 Q (By Mr. Williams) I'll ask it another way.</p> <p>22 A Okay.</p> <p>23 Q Out of the multiple hundreds of publications that your</p> <p>24 resume lists with you as an author, how many cite to</p> <p>25 internal company documents?</p>
<p style="text-align: right;">Page 39</p> <p>1 negative samples were provided, and there's only five</p> <p>2 that are positive, that's still concerning.</p> <p>3 Q Were you provided any negative samples?</p> <p>4 A I did see evidence that some were negative, yes.</p> <p>5 Q Where did you see that?</p> <p>6 A I saw that in the Longo report, so there was-- each</p> <p>7 report had a different percent that were positive.</p> <p>8 Some were 50 percent positive, some 66 or 70 percent</p> <p>9 positive, so that means the inverse, 30 to 50 percent</p> <p>10 were negative, did not have asbestos.</p> <p>11 Also, from my perusal of the Johnson & Johnson and</p> <p>12 Imerys documents that seem to be exhibits, it looked like</p> <p>13 there were some, but sometimes it was small amounts but</p> <p>14 sometimes it was larger, but that some contamination or</p> <p>15 inclusion of asbestos, but many times not.</p> <p>16 There was also an FDA website that was able to look</p> <p>17 at where they only tested, however, two products, two</p> <p>18 bottles of Johnson & Johnson, and those were both</p> <p>19 negative.</p> <p>20 Q In the normal course of your work outside of litigation,</p> <p>21 do you review internal company documents for any reason?</p> <p>22 A No, not-- I would not have a reason to do that.</p> <p>23 Q When setting out to conduct research on a medical or</p> <p>24 other scientific question, outside of litigation, have</p> <p>25 you ever sought internal company documents related to the</p>	<p style="text-align: right;">Page 41</p> <p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: I believe that none do.</p> <p>3 Most of my papers are with data from my own studies.</p> <p>4 Q (By Mr. Williams) Now, you were asked in this matter to</p> <p>5 review the current state of scientific literature</p> <p>6 regarding talcum powder products and to opine on whether</p> <p>7 those products cause ovarian cancer.</p> <p>8 Is that accurate?</p> <p>9 A Yes. I was asked to do a causal analysis and to form an</p> <p>10 opinion on the association between use of talcum powder</p> <p>11 products and risk of ovarian cancer.</p> <p>12 Q Were you given any other questions to answer or opine on?</p> <p>13 A So I'm just looking at your question. I'm sorry.</p> <p>14 I think this summarizes the question I was asked to</p> <p>15 answer.</p> <p>16 Q You were not retained to provide an opinion about whether</p> <p>17 or not talc can cause pleural or peritoneal mesothelioma,</p> <p>18 were you?</p> <p>19 A I was not, no.</p> <p>20 Q And you are not in fact providing an opinion on that</p> <p>21 subject?</p> <p>22 A I am not.</p> <p>23 Q Did you in fact review what you believe to be the current</p> <p>24 state of scientific literature regarding the question of</p> <p>25 whether talc can cause ovarian cancer?</p>

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<p style="text-align: right;">Page 42</p> <p>1 A Yes, I believe I did.</p> <p>2 Q Did you consider literature and sources that refuted an</p> <p>3 association or causal association between talc and</p> <p>4 ovarian cancer?</p> <p>5 A Yes, I did.</p> <p>6 I looked at the entirety of literature as I knew</p> <p>7 it-- as I was able to find it.</p> <p>8 Q Did you consider literature and sources that have</p> <p>9 concluded that the totality of the scientific evidence is</p> <p>10 insufficient to find a causal association between talc</p> <p>11 and ovarian cancer?</p> <p>12 MS. PARFITT: Objection; form.</p> <p>13 THE WITNESS: Yes.</p> <p>14 Q (By Mr. Williams) When you wrote your report setting</p> <p>15 forth your opinions in this case, did you identify the</p> <p>16 sources that refuted the propositions that you were</p> <p>17 making?</p> <p>18 A Those papers would have been part of my report, yes.</p> <p>19 Q So is it your testimony that the report that you have in</p> <p>20 front of you, Exhibit No. 2, actually identifies the</p> <p>21 sources that refuted the propositions that you were</p> <p>22 making?</p> <p>23 A Yes.</p> <p>24 If these were papers that included data-- so I use</p> <p>25 data-- I reviewed the data from these studies, and</p>	<p style="text-align: right;">Page 44</p> <p>1 It's in the table, and in the report I did note</p> <p>2 where there was a dose response note-- I did note whether</p> <p>3 there was a dose response seen in the paper.</p> <p>4 I can't-- let me see, I can look through-- I'm not</p> <p>5 sure if you want me to look through for each--</p> <p>6 Q We'll do that a little later.</p> <p>7 A Okay.</p> <p>8 Q Let me ask you now to turn to Page 68 of your report with</p> <p>9 the heading that says, "Conclusion."</p> <p>10 A (Witness complies.)</p> <p>11 Q Do you have that in front of you?</p> <p>12 A Yes.</p> <p>13 Q Does that conclusion accurately summarize your opinion in</p> <p>14 this case on the question of whether or not perineal use</p> <p>15 of talcum powder products can cause ovarian cancer?</p> <p>16 A Yes.</p> <p>17 Q Now, your opinion is stated to a, quote, "medical and</p> <p>18 scientific degree of certainty," closed quote.</p> <p>19 Do you see that?</p> <p>20 A Yes.</p> <p>21 Q What do you mean by the use of the term "degree" in that</p> <p>22 sentence?</p> <p>23 A I would say a high degree.</p> <p>24 I don't put percentages on my opinion. It's not</p> <p>25 typical in my field to do that, but I would say with a</p>
<p style="text-align: right;">Page 43</p> <p>1 regardless of what those studies concluded, I included</p> <p>2 them in the report.</p> <p>3 Q Did you discuss in your report the part or parts within</p> <p>4 those sources that refuted the propositions you were</p> <p>5 making, including the data?</p> <p>6 A I believe that I discussed in general that-- whether</p> <p>7 there is evidence of a causal relationship between talcum</p> <p>8 powder product use and risk of ovarian cancer.</p> <p>9 I did not, for each paper, reiterate what they</p> <p>10 concluded. I looked at their data.</p> <p>11 Q If there were parts of a study, for instance, that did</p> <p>12 not support one of your opinions, did you make a note of</p> <p>13 that in your report?</p> <p>14 MS. PARFITT: Objection; form.</p> <p>15 THE WITNESS: If the studies did not</p> <p>16 show an association between talcum powder product use and</p> <p>17 risk of ovarian cancer, I included those data, yes.</p> <p>18 I included it both in the content of the report as</p> <p>19 well as in the data table that I included at the end of</p> <p>20 the report, and I included those data.</p> <p>21 Q (By Mr. Williams) If those data did not, for instance,</p> <p>22 show a dose response related to exposure to talcum powder</p> <p>23 and the incidence of ovarian cancer, did you note in your</p> <p>24 report where the data did not support dose response?</p> <p>25 A I did note that.</p>	<p style="text-align: right;">Page 45</p> <p>1 high degree of certainty that based on the totality of</p> <p>2 evidence, that use of talcum powder products can cause</p> <p>3 ovarian cancer.</p> <p>4 Q Do you believe that perineal use of talcum powder</p> <p>5 products manufactured today, in 2019, can cause ovarian</p> <p>6 cancer?</p> <p>7 A So talcum powder products, yes.</p> <p>8 There's no evidence that it would have changed.</p> <p>9 The evidence from the epidemiologic studies were</p> <p>10 from people's use decades previously, but then looking at</p> <p>11 contents of talcum powder products over time it looks</p> <p>12 like they continue to have constituents that could be</p> <p>13 carcinogenic, as well as talcum powder by itself has been</p> <p>14 shown to be carcinogenic, and so I believe that if</p> <p>15 somebody was using them today, they could still have the</p> <p>16 same potential for developing ovarian cancer as if they</p> <p>17 used them 50 years ago.</p> <p>18 Q So the answer to my question is that you believe that</p> <p>19 perineal use of talcum powder products manufactured</p> <p>20 today, in 2019, can cause ovarian cancer, correct?</p> <p>21 A Yes-- yes.</p> <p>22 Q Did you reach the opinion, to a degree of medical and</p> <p>23 scientific certainty, that perineal use of talcum powder</p> <p>24 products can cause ovarian cancer before or after you</p> <p>25 were hired by Plaintiffs' counsel?</p>

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<p style="text-align: right;">Page 46</p> <p>1 A After I had conducted a full systematic review of the</p> <p>2 epidemiology data and mechanistic data, including</p> <p>3 biologic evidence, and then done a causal analysis,</p> <p>4 that's when I concluded that these products could</p> <p>5 increase-- could cause ovarian cancer.</p> <p>6 Q So the answer is after you were hired by Plaintiffs'</p> <p>7 counsel; is that correct?</p> <p>8 MS. PARFITT: Objection; misstates her</p> <p>9 testimony, asked and answered.</p> <p>10 Q (By Mr. Williams) I am looking for a temporal answer.</p> <p>11 So my question is:</p> <p>12 Did you reach your conclusions before or after you</p> <p>13 were retained by Plaintiffs' counsel?</p> <p>14 MS. PARFITT: Objection; form, asked</p> <p>15 and answered.</p> <p>16 THE WITNESS: It was after I had done</p> <p>17 the causal analysis.</p> <p>18 Q (By Mr. Williams) And that was after you were retained?</p> <p>19 MS. PARFITT: Objection.</p> <p>20 THE WITNESS: That was after I did the</p> <p>21 causal analysis, which was after I began this project</p> <p>22 with Counsel.</p> <p>23 Q (By Mr. Williams) Did you consider whether some brands</p> <p>24 of talcum powder products can cause ovarian cancer but</p> <p>25 others may not?</p>	<p style="text-align: right;">Page 48</p> <p>1 cause ovarian cancer.</p> <p>2 Q And that is true whether it's Johnson's Baby Powder or</p> <p>3 any other talcum powder product?</p> <p>4 MS. PARFITT: Objection; form.</p> <p>5 THE WITNESS: Yes.</p> <p>6 Q (By Mr. Williams) Is it your opinion that genital</p> <p>7 perineal use of Shower to Shower product specifically can</p> <p>8 cause ovarian cancer?</p> <p>9 A To my knowledge it includes both talc, and some percent</p> <p>10 may include asbestos and other constituents, and so that</p> <p>11 would be my opinion, yes.</p> <p>12 Q And same question:</p> <p>13 Even if Shower to Shower product did not contain</p> <p>14 asbestos, it is your conclusion that because it contains</p> <p>15 talc, it can cause ovarian cancer, correct?</p> <p>16 A Yes.</p> <p>17 Q And it's your testimony here today that it has been</p> <p>18 established, to a degree of medical and scientific</p> <p>19 certainty, that that is the case?</p> <p>20 A Yes.</p> <p>21 Q Is it your testimony today that it is accepted in the</p> <p>22 medical and scientific field that talcum powder causes</p> <p>23 ovarian cancer?</p> <p>24 MS. PARFITT: Objection; form.</p> <p>25 THE WITNESS: I would say that many</p>
<p style="text-align: right;">Page 47</p> <p>1 A The epidemiology data were insufficient to determine</p> <p>2 whether any particular brand was used by women, except</p> <p>3 for one study, Cramer, in 2016.</p> <p>4 It's my understanding that Johnson & Johnson</p> <p>5 products had the vast proportion of the market share over</p> <p>6 time, but I did not come to a conclusion that any</p> <p>7 particular product was causing this.</p> <p>8 All I know is that use of these products by these</p> <p>9 women over time increased their risk for ovarian cancer</p> <p>10 and that it can cause ovarian cancer.</p> <p>11 Q So it is your opinion that genital perineal use of</p> <p>12 Johnson's Baby Powder specifically can cause ovarian</p> <p>13 cancer, correct?</p> <p>14 A Yes, given that it's been shown to contain asbestos,</p> <p>15 given that it contains talc, which has been shown to be</p> <p>16 carcinogenic, then I would say yes, it could be-- it</p> <p>17 could be a cause of ovarian cancer.</p> <p>18 Q Let me tease that out a little bit.</p> <p>19 If the product did not contain asbestos, is it your</p> <p>20 testimony that-- is it your opinion that genital perineal</p> <p>21 use of Johnson's Baby Powder can cause ovarian cancer</p> <p>22 without containing asbestos?</p> <p>23 A Yes, even without asbestos, my opinion is that talc can</p> <p>24 increase risk of ovarian cancer, that there are</p> <p>25 biological mechanisms, and so that these products could</p>	<p style="text-align: right;">Page 49</p> <p>1 scientists, many clinicians do believe that it can cause</p> <p>2 ovarian cancer.</p> <p>3 Q (By Mr. Williams) My question is different.</p> <p>4 My question is whether or not, Dr. McTiernan, it is</p> <p>5 accepted in the medical and scientific community today</p> <p>6 that exposure to talcum powder causes ovarian cancer.</p> <p>7 A And I think I'm having trouble with the word "accepted,"</p> <p>8 so I am not sure specifically what you mean that it was</p> <p>9 "accepted."</p> <p>10 Who it is accepted by, does somebody have</p> <p>11 guidelines, is somebody giving advice to the public--</p> <p>12 there are lots of different organizations that you could</p> <p>13 call "the medical field," so I think that's why I'm</p> <p>14 having some trouble there.</p> <p>15 To me it's a question that's not specific enough for</p> <p>16 me to figure out how to answer it.</p> <p>17 Q Well, it's one thing if there is a person in the medical</p> <p>18 or scientific field who holds an opinion and quite</p> <p>19 another to say that something is generally accepted in</p> <p>20 the medical and scientific community that a substance</p> <p>21 causes cancer; isn't that right?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: Yeah, I still have a</p> <p>24 problem with the word "accepted" because I work in many</p> <p>25 other areas, and I have seen that there are so many</p>

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<p>1 different opinions by clinicians, by scientists about</p> <p>2 associations, and then it comes to the point of policy</p> <p>3 and coming up with guidelines.</p> <p>4 That's why I am having a little problem answering a</p> <p>5 question of whether it's accepted.</p> <p>6 I think that for me what I can come up with is this</p> <p>7 is my opinion from the research that I've done.</p> <p>8 I can't speak for other medical groups of whatever</p> <p>9 you are talking about.</p> <p>10 I'm not sure which groups you are talking about.</p> <p>11 Q (By Mr. Williams) Wouldn't it be accurate to say,</p> <p>12 Dr. McTiernan, that it is, at best, inconsistent in terms</p> <p>13 of the medical and scientific community as to whether or</p> <p>14 not exposure to talcum powder in the perineal area causes</p> <p>15 ovarian cancer?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 THE WITNESS: Oh, I would say that any</p> <p>18 exposure, any medical treatment, any medical prevention</p> <p>19 method is going to be inconsistent, and I do know that</p> <p>20 IARC has classified talc, even talc without asbestos, as</p> <p>21 a possible carcinogen, and they have a pretty high bar</p> <p>22 for whether they're going to consider something a</p> <p>23 carcinogen, and they were talking about ovarian cancer</p> <p>24 specifically.</p> <p>25 Q (By Mr. Williams) We'll talk about that a little bit</p>	<p>1 causes ovarian cancer, isn't it accurate to say that that</p> <p>2 survey is at best inconsistent as to that conclusion?</p> <p>3 MS. PARFITT: Objection; form,</p> <p>4 misstates her testimony-- excuse me, it doesn't misstate</p> <p>5 her testimony. It's been asked and answered, clearly.</p> <p>6 THE WITNESS: I think-- I think from</p> <p>7 what you're asking is I've surveyed the medical community</p> <p>8 and scientific community, which I have not. I have not</p> <p>9 surveyed them.</p> <p>10 My job was to review studies to look at the</p> <p>11 epidemiologic data. That was my primary purpose.</p> <p>12 Then to look at biological mechanisms.</p> <p>13 And then to do a causal analysis.</p> <p>14 I did not contact and survey the medical community</p> <p>15 in this field, which could be vast because we are talking</p> <p>16 about gynecology, prevention, government bodies,</p> <p>17 epidemiology-- I just did not-- I was not asked to do</p> <p>18 that and I did not do that.</p> <p>19 Q (By Mr. Williams) In forming your opinion that perineal</p> <p>20 talc use can cause ovarian cancer, did you calculate how</p> <p>21 much talc is needed to cause ovarian cancer?</p> <p>22 A I looked at that. I was not able to determine because</p> <p>23 there's no-- no study has been able to collect</p> <p>24 information in enough depth to know how much the</p> <p>25 individual woman used, exactly how much in a particular</p>
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<p>1 later, but let me go back to my question.</p> <p>2 My question is whether or not it is at best</p> <p>3 inconsistent, in terms of looking across the available</p> <p>4 medical and scientific information regarding an</p> <p>5 association between talcum powder and causing ovarian</p> <p>6 cancer, to conclude that in fact talcum powder exposure</p> <p>7 in the perineal area causes ovarian cancer; isn't that</p> <p>8 true?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 THE WITNESS: So I think I would feel</p> <p>11 a little better if you are talking now about across the</p> <p>12 evidence or across all of this research, all of these</p> <p>13 studies, and there were-- there have been 24 to 25</p> <p>14 case-control cohort studies that have looked at this</p> <p>15 information, and when you look at them in totality,</p> <p>16 either meta-analysis or pooled analysis, you really see</p> <p>17 clear evidence that ovarian cancer risk is higher in</p> <p>18 people who have-- and statistically significantly higher</p> <p>19 in people who have used these products.</p> <p>20 Q (By Mr. Williams) Let me ask you, for purposes of my</p> <p>21 question, to focus on the medical and scientific</p> <p>22 community, okay, not your personal opinion of the data.</p> <p>23 With respect to your survey of the medical and</p> <p>24 scientific community and its analysis of whether or not</p> <p>25 exposure to talcum powder in the perineal area actually</p>	<p>1 day she used, and what was the content of the particular</p> <p>2 bottle that she used or the bottle she used over time,</p> <p>3 and many of the studies did not also even include enough</p> <p>4 information to look at how frequently or how often they</p> <p>5 did, but once they did, then you could see if you had</p> <p>6 people that used it more often for a longer period of</p> <p>7 time, that's when there was even a great increase in</p> <p>8 risk, and that would be a dose response effect.</p> <p>9 Q Is the answer to my question "no," you did not calculate</p> <p>10 how much talc is needed to cause ovarian cancer?</p> <p>11 MS. PARFITT: Objection; form, asked</p> <p>12 and answered.</p> <p>13 Q (By Mr. Williams) I am not asking for the reasons.</p> <p>14 I am just asking for the bottom line.</p> <p>15 The bottom line is that you did not calculate how</p> <p>16 much talc is needed to cause ovarian cancer, correct?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: It was not possible to</p> <p>19 determine exactly how much talcum powder product was</p> <p>20 used, so therefore it's not possible to determine how</p> <p>21 much of each dose particular-- of a particular product</p> <p>22 increases risk.</p> <p>23 Q (By Mr. Williams) In your mind is there a dose of talc</p> <p>24 that does not cause ovarian cancer when applied</p> <p>25 perineally?</p>

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<p style="text-align: right;">Page 54</p> <p>1 A There's no evidence that there's any lower threshold</p> <p>2 than--</p> <p>3 Q I-- I'm sorry. I didn't mean to cut you off.</p> <p>4 A So the question is there a dose of--</p> <p>5 Q Is there a dose of talc that does not cause ovarian</p> <p>6 cancer when applied perineally?</p> <p>7 A There's no evidence that there's any lower limit to a</p> <p>8 dose-- to use of these products that could increase risk.</p> <p>9 Q It is your testimony here today that a single dose from a</p> <p>10 single perineal application of talc is enough to cause</p> <p>11 ovarian cancer based upon your review of the studies?</p> <p>12 A The studies did not give that level of detail, of whether</p> <p>13 somebody used one dose in terms of ovarian cancer risk.</p> <p>14 However, if you think of the biology, if this one</p> <p>15 dose was introduced perineal, then could move up through</p> <p>16 the vagina, through the cervix and the uterus, and get to</p> <p>17 just as far as the fallopian tubes, if it sits in there</p> <p>18 and causes an inflammatory reaction, theoretically one</p> <p>19 dose could be enough.</p> <p>20 Typically in epidemiologic studies we look for dose</p> <p>21 response, so if somebody is using something longer, more</p> <p>22 time, more frequently, that increases the chance that</p> <p>23 some of that content could get up into her perineal--</p> <p>24 sorry, her peritoneal, fallopian tubes, ovaries, but</p> <p>25 there's no reason that one dose couldn't do that.</p>	<p style="text-align: right;">Page 56</p> <p>1 MS. PARFITT: Objection; asked and</p> <p>2 answered.</p> <p>3 She has responded.</p> <p>4 THE WITNESS: I am saying I couldn't</p> <p>5 find data from the studies about one dose, the effect of</p> <p>6 one dose on ovarian cancer, but I am saying that one dose</p> <p>7 could cause inflammation.</p> <p>8 Q (By Mr. Williams) When you said "theoretically one dose</p> <p>9 could be enough," you were speculating, correct?</p> <p>10 MS. PARFITT: Objection; asked and</p> <p>11 answered, and she has given you the answer, Mr. Williams.</p> <p>12 THE WITNESS: I am saying I don't have</p> <p>13 the data to say exactly.</p> <p>14 Q (By Mr. Williams) You don't have the data to say one way</p> <p>15 or the other?</p> <p>16 MS. PARFITT: Objection; misstates her</p> <p>17 testimony.</p> <p>18 THE WITNESS: I don't have the data on</p> <p>19 ovarian cancer and one dose.</p> <p>20 MS. PARFITT: Mr. Williams, without</p> <p>21 breaking any train of thought, we have gone about an hour</p> <p>22 and 15 minutes. Maybe in an appropriate place, we could</p> <p>23 take a minute, but I don't want to break your stride.</p> <p>24 MR. WILLIAMS: In a minute. Thank</p> <p>25 you.</p>
<p style="text-align: right;">Page 55</p> <p>1 We do know from the biology that one dose of talc</p> <p>2 injected either into the pleura or into the lungs can</p> <p>3 cause an inflammatory response.</p> <p>4 Q When you say "theoretically one dose could be enough,"</p> <p>5 you are speculating; are you not?</p> <p>6 MS. PARFITT: Objection; misstates her</p> <p>7 testimony, form.</p> <p>8 THE WITNESS: I am saying that we know</p> <p>9 from other evidence, the biology, that if one dose is</p> <p>10 injected into the pleura, and I'm talking humans, or</p> <p>11 inhaled into the lungs, one dose can cause an</p> <p>12 inflammatory response, so that's why I believe one dose</p> <p>13 could cause a response in the peritoneal area-- sorry, in</p> <p>14 the fallopian tube or ovarian area.</p> <p>15 Q (By Mr. Williams) You used the phrase "theoretically one</p> <p>16 dose could be enough," did you not, in your answer a few</p> <p>17 moments ago?</p> <p>18 A I said that because it would be unethical to introduce</p> <p>19 one dose of this substance into the fallopian tubes or</p> <p>20 ovary area, so you couldn't test that in a human</p> <p>21 directly.</p> <p>22 Q My question is different, ma'am.</p> <p>23 My question is that you are the person in the room</p> <p>24 who used the phrase "theoretically one dose could be</p> <p>25 enough" just a few moments ago, correct?</p>	<p style="text-align: right;">Page 57</p> <p>1 Q (By Mr. Williams) When you said a few moments ago that</p> <p>2 you believe that even one dose could cause inflammation,</p> <p>3 based upon your review of the science, have you reviewed</p> <p>4 scientific literature, any study that says talcum powder</p> <p>5 causes inflammation, which inflammation causes ovarian</p> <p>6 cancer?</p> <p>7 A The evidence that I was able to look at, because you can</p> <p>8 not do-- ethically you cannot do a clinical trial where</p> <p>9 you expose women to talcum powder products in one group</p> <p>10 and a placebo in another and then follow them forward for</p> <p>11 30 or 40 years to see if you develop ovarian cancer--</p> <p>12 because that trial cannot be done, we have to look at</p> <p>13 different lines of evidence, so we look at the</p> <p>14 epidemiology, we look at whether materials can be</p> <p>15 introduced into the peritoneal area and make their way up</p> <p>16 through the vaginal tract and get to the fallopian tubes</p> <p>17 or ovaries, and then we know that inflammation does</p> <p>18 increase risk for ovarian cancer.</p> <p>19 There have been many studies that show that</p> <p>20 individuals with high levels of inflammatory markers in</p> <p>21 their blood, for example, have increased risk for ovarian</p> <p>22 cancer, and people with inflammatory conditions, again,</p> <p>23 endometriosis, are at an increased risk for ovarian</p> <p>24 cancer.</p> <p>25 Q Does all inflammation cause cancer, ma'am?</p>

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<p style="text-align: right;">Page 58</p> <p>1 A It's not clear that all does, but it certainly increases</p> <p>2 risk.</p> <p>3 Q So the answer is "no," not all inflammation causes</p> <p>4 cancer?</p> <p>5 MS. PARFITT: Objection; misstates her</p> <p>6 testimony.</p> <p>7 THE WITNESS: I am saying that the</p> <p>8 inflammation-- increased inflammation is associated with</p> <p>9 increased risk for cancer.</p> <p>10 Q (By Mr. Williams) What types of cancer?</p> <p>11 A For example, some inflammatory conditions like Crohn's</p> <p>12 disease increases risk for colon cancer.</p> <p>13 Individuals with rheumatoid arthritis have increased</p> <p>14 risk for lymphoma.</p> <p>15 Those inflammatory markers that I mentioned, like</p> <p>16 C-reactive protein and to interleukin 6 or 8, if those</p> <p>17 are increased, all those are can increase risk for breast</p> <p>18 cancer, ovarian cancer, colon cancer, and other cancers.</p> <p>19 Q Now, you have a medical degree, correct?</p> <p>20 A Mm-hm.</p> <p>21 Q Is that a "yes"?</p> <p>22 A Yes.</p> <p>23 Q And you held a license to practice medicine in the state</p> <p>24 of Washington from July of 1991 to February 18th of 2018;</p> <p>25 is that right?</p>	<p style="text-align: right;">Page 60</p> <p>1 there.</p> <p>2 The work I do for the World Cancer Research Fund</p> <p>3 looks at association of diet and physical activity and</p> <p>4 obesity, and risk of cancer and ovarian cancer is one of</p> <p>5 those.</p> <p>6 Q I didn't mean to include the work you have done on the</p> <p>7 World Cancer Research Fund. I meant separately published</p> <p>8 articles of the sort that are referenced on your CV.</p> <p>9 Did you understand that to be my question?</p> <p>10 A Yes.</p> <p>11 So the first one is in press for 2019, for March of</p> <p>12 2019, and ovarian was one of those cancers.</p> <p>13 Q And where is that to be published?</p> <p>14 A Medicine & Science in Sports & Exercise.</p> <p>15 Q Have you ever given any lectures regarding talcum powder</p> <p>16 products and ovarian cancer?</p> <p>17 A No, I have not.</p> <p>18 Q Have you ever given any presentations regarding talcum</p> <p>19 powder products and ovarian cancer?</p> <p>20 A No, I haven't.</p> <p>21 Q Have you ever posted on social media at all regarding</p> <p>22 talcum powder products and ovarian cancer?</p> <p>23 A I don't believe so.</p> <p>24 Q Have you ever written any textbook chapters regarding</p> <p>25 talcum powder products and ovarian cancer?</p>
<p style="text-align: right;">Page 59</p> <p>1 A I apologize, it's still active. I still have a license.</p> <p>2 Q And you held what's known as a DEA license that allows</p> <p>3 one to prescribe medicines?</p> <p>4 A Yes.</p> <p>5 Q Is that still active?</p> <p>6 A That's still active, yes.</p> <p>7 Q Is it accurate to say that you have never been a</p> <p>8 gynecological oncologist?</p> <p>9 A That's accurate.</p> <p>10 Q Now, you have written two articles about how diet and</p> <p>11 exercise affect women after they have been diagnosed with</p> <p>12 gynecologic cancer, correct?</p> <p>13 A At least two, yeah.</p> <p>14 Q None of the articles that you've written on that topic</p> <p>15 studied what causes or may cause gynecological cancers;</p> <p>16 is that true?</p> <p>17 A That's correct.</p> <p>18 Q Can we agree that you have never written any</p> <p>19 peer-reviewed, published article or study on the causes</p> <p>20 of ovarian cancer?</p> <p>21 A If we're talking about an overall general article, that's</p> <p>22 true.</p> <p>23 However, we have a paper in press that is looking at</p> <p>24 the association of physical activity with various</p> <p>25 cancers, and ovarian cancer was one that was included</p>	<p style="text-align: right;">Page 61</p> <p>1 A No, I haven't.</p> <p>2 Q You are not and were not ever an oncologist of any kind?</p> <p>3 A No.</p> <p>4 Q You are not a pathologist, correct?</p> <p>5 A No.</p> <p>6 Q You are not a cancer biologist, right?</p> <p>7 A No.</p> <p>8 Q You are not a toxicologist?</p> <p>9 A No.</p> <p>10 Q You are not an industrial hygienist?</p> <p>11 A No.</p> <p>12 Q Prior to being hired by the Plaintiffs' lawyers in talc</p> <p>13 litigation, you had not personally conducted research on</p> <p>14 talcum powder product use and risk for ovarian cancer,</p> <p>15 true?</p> <p>16 MS. PARFITT: Objection; misstates her</p> <p>17 testimony, form.</p> <p>18 THE WITNESS: Let me look at the--</p> <p>19 prior to being hired-- it depends on what you consider</p> <p>20 research because I had read some articles, but I had not</p> <p>21 produced a report in that area.</p> <p>22 Q (By Mr. Williams) Let me put it this way:</p> <p>23 You have published several manuscripts on</p> <p>24 gynecologic cancers, including the prevention of ovarian</p> <p>25 cancer in women at high genetic risk, correct?</p>

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<p style="text-align: right;">Page 62</p> <p>1 A Yes.</p> <p>2 Q And you have published manuscripts regarding the effects</p> <p>3 of weight and exercise on the risk for ovarian cancer,</p> <p>4 correct?</p> <p>5 A Yes.</p> <p>6 Q But you have not personally conducted research on talcum</p> <p>7 powder use and risk for ovarian cancer, correct?</p> <p>8 MS. PARFITT: Objection.</p> <p>9 THE WITNESS: The report that I've</p> <p>10 just prepared I would say is research because it was a</p> <p>11 systematic review.</p> <p>12 Q (By Mr. Williams) Let me have you look at Exhibit No. 2,</p> <p>13 your report, and then we'll take a break in a minute.</p> <p>14 A (Witness complies.)</p> <p>15 Q Could you turn to Page 6, please?</p> <p>16 The first full paragraph on Page 6 begins by saying,</p> <p>17 "Although I have not personally conducted research on</p> <p>18 talcum powder product use and risk for ovarian cancer, I</p> <p>19 have published several manuscripts," and it goes on.</p> <p>20 Do you see that?</p> <p>21 A Yes.</p> <p>22 Q Is the first clause in that sentence true or not true?</p> <p>23 A Yes, that's true.</p> <p>24 Q Let's just mark, before we take a break, these other</p> <p>25 items we said we were going to mark.</p>	<p style="text-align: right;">Page 64</p> <p>1 Q (By Mr. Williams) Dr. McTiernan, before you were ever</p> <p>2 retained as a paid consultant for this litigation in the</p> <p>3 fall of 2016, you had written literally hundreds of</p> <p>4 articles for peer-reviewed journals.</p> <p>5 Is that true?</p> <p>6 A Yes.</p> <p>7 Q You have worked on comprehensive written reports for the</p> <p>8 U.S. government in your career?</p> <p>9 A Yes.</p> <p>10 Q Can you just describe very briefly, if you would, the</p> <p>11 types?</p> <p>12 A The U.S. government, I did two reports on physical</p> <p>13 activity and cancer risk and survival, 2008 and 2018, so</p> <p>14 this was the-- it's called a physical activity guidelines</p> <p>15 advisory committee, and for that we relied on</p> <p>16 meta-analyses. We did not do our own research.</p> <p>17 I've also over the years done grant reviews for the</p> <p>18 government. I have reviewed their intramural program, so</p> <p>19 that means their science, have reviewed their science,</p> <p>20 and I have prepared reports years ago for National Cancer</p> <p>21 Institute for-- I've done grant reviews for other</p> <p>22 country's governments.</p> <p>23 That's my governmental service.</p> <p>24 I was on-- sorry, the United States government</p> <p>25 still-- grant reviews for the Department of Defense and</p>
<p style="text-align: right;">Page 63</p> <p>1 First is Exhibit No. 3, we would like to mark it,</p> <p>2 "Additional materials to Dr. Anne McTiernan."</p> <p>3 (Exhibit No. 3 marked</p> <p>4 for identification.)</p> <p>5</p> <p>6 Q (By Mr. Williams) Now, I think you told us that the</p> <p>7 additional materials that you brought here today support</p> <p>8 your opinions; is that correct?</p> <p>9 A Yes.</p> <p>10 Q Other than believing that those materials you brought</p> <p>11 today support your opinions with respect to the</p> <p>12 association between perineal talcum powder use and</p> <p>13 ovarian cancer, have your opinions changed at all since</p> <p>14 you first prepared your report that we've marked as</p> <p>15 Exhibit No. 2?</p> <p>16 A No, they have not.</p> <p>17 MR. WILLIAMS: Thanks. Let's take a</p> <p>18 quick break, about ten minutes.</p> <p>19 VIDEOGRAPHER: Going off the record,</p> <p>20 the time is 10:28 a.m.</p> <p>21 (Recess 10:28 to 10:40 a.m.)</p> <p>22</p> <p>23 VIDEOGRAPHER: The time is 10:40 a.m.</p> <p>24 We are back on the record. This is the start of Media</p> <p>25 Unit 2.</p>	<p style="text-align: right;">Page 65</p> <p>1 the National Institute of Health.</p> <p>2 Q Let me ask you to look in your report, Exhibit No. 2, at</p> <p>3 Page No. 7.</p> <p>4 In the section of your report entitled, "Overall</p> <p>5 approach," you write, in the second sentence, "I drew</p> <p>6 upon my years of experience with synthesizing and</p> <p>7 interpreting large numbers of epidemiologic studies for</p> <p>8 comprehensive reports, including work for the U.S.</p> <p>9 government," and we have gone through that, right?</p> <p>10 A Mm-hm.</p> <p>11 Q Is that a "yes"?</p> <p>12 A Yes. Sorry.</p> <p>13 Q You go on to say, "the World Health Organization,</p> <p>14 International Agency for Research on Cancer"-- IARC,</p> <p>15 correct?</p> <p>16 A Yes.</p> <p>17 Q --"and the World Cancer Research Fund," correct?</p> <p>18 A Yes.</p> <p>19 Q And you have drawn upon your experience with all of those</p> <p>20 organizations in setting forth your conclusions here?</p> <p>21 A Yes.</p> <p>22 Q And that's what you write in your report?</p> <p>23 A Yes.</p> <p>24 Q And you write that your opinions are based on the</p> <p>25 published epidemiologic evidence, including original</p>

17 (Pages 62 to 65)

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<p>1 case-control and cohort studies, systematic reviews, 2 meta-analyses, and pooled analyses on the topic of talcum 3 powder products exposure and a risk of ovarian cancer, 4 correct?</p> <p>5 A Yes, that's what I wrote.</p> <p>6 Q Okay. For the World Cancer Research Fund, you are a 7 member of the advisory panel of experts that guides 8 interpretation of meta-analyses and systematic reviews of 9 nutrition, physical activity, obesity, and risk for many 10 cancers, correct?</p> <p>11 A Yes, that's correct.</p> <p>12 Q On Page 5, if you flip one page earlier, you reference, 13 in the section of your report citing your credentials, 14 the work that you have done for the World Cancer Research 15 Fund, right?</p> <p>16 A Yes.</p> <p>17 Q In the middle of the page on Page 5 of Exhibit No. 2 you 18 say, "For the World Cancer Research Fund, I am a member 19 of the advisory panel of experts that guides 20 interpretation of meta-analyses and systematic reviews of 21 nutrition, physical activity, obesity, and risk for many 22 cancers, including ovarian cancer," right?</p> <p>23 A Yes.</p> <p>24 Q And you have a link there to an ovarian cancer 2014 25 report that you did, right?</p>	<p>1 cancers.</p> <p>2 I can't say who wrote them because I never quite 3 know who exactly did what-- what one person did the main 4 report drafting.</p> <p>5 Q As a panel member, you read the reports though, right?</p> <p>6 A Yes.</p> <p>7 Q As a panel member you make recommendations based on the 8 reports, don't you?</p> <p>9 A Say it again--</p> <p>10 Q As a panel member--</p> <p>11 A You make recommendations-- that means to them or to--</p> <p>12 Q To the public.</p> <p>13 Let me rephrase the question.</p> <p>14 As a panel member for the World Cancer Research 15 Fund, the WCRF, you read the reports that are prepared by 16 that organization and make recommendations to the public 17 based upon those reports, right?</p> <p>18 A I do read the reports. I give input because I'm part of 19 a panel. It doesn't mean I can drive exactly what gets 20 sent there.</p> <p>21 When the public recommendations come out, we are 22 given a set of guidelines that if there are 23 recommendations that are developed, they will be 24 standardized, and we are asked to follow those standards.</p> <p>25 I cannot develop my own standards for what</p>
Page 67	Page 69
<p>1 A Yes.</p> <p>2 Q And that--</p> <p>3 A Maybe I could correct that.</p> <p>4 I'm on the advisory panel. I don't prepare those 5 reports.</p> <p>6 I help interpret them, but it's the World Cancer 7 Research Fund scientists-- sorry, Imperial College does 8 the meta-analyses and the systematic reviews, and then 9 the World Cancer Research Fund has scientists that write 10 the reports.</p> <p>11 As an advisory committee member, I give opinions 12 on-- with the rest of the committee on-- and we summarize 13 what we think we are seeing in those-- in the data.</p> <p>14 Q So just to make sure that I understand the process, the-- 15 you mentioned that there are staff members, I suppose, 16 from Imperial College who actually write the reports?</p> <p>17 A The staff members-- the scientists from Imperial College 18 do the meta-analyses. They collect the data from all 19 available studies, and they prepare data tables, and 20 there are scientists at World Cancer Research Fund-- so 21 it's a funding organization and a scientific 22 organization, so their scientists write the reports.</p> <p>23 For some of these cancers they also contract to 24 the-- to IARC, to scientists there who will write some of 25 the background epidemiology and the biology of particular</p>	<p>1 recommendations or what statements are made to the public 2 from that.</p> <p>3 (Exhibit No. 4 marked 4 for identification.)</p> <p>5</p> <p>6 Q (By Mr. Williams) Let me have you take a look at what 7 we've marked as Exhibit No. 4, which is a copy of this 8 report that you provided a link to in your report at Page 9 5.</p> <p>10 Page 5 of your report in this case, Exhibit No. 2-- 11 Dr. McTiernan, can I have your attention?</p> <p>12 A Yes.</p> <p>13 Q In the report that you wrote for this case at Page No. 5, 14 you provided a link.</p> <p>15 Do you see that?</p> <p>16 A Yes.</p> <p>17 Q That link is to a report that you are holding in your 18 hand, which is a 2014 ovarian cancer report, "Food, 19 nutrition, physical activity, and prevention of ovarian 20 cancer" that was prepared by the World Cancer Research 21 Fund, right?</p> <p>22 A Correct.</p> <p>23 Q In the bottom right-hand corner of the page do you see 24 there's a logo for something called the Continuous Update 25 Project?</p>

18 (Pages 66 to 69)

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<p>1 A Yes.</p> <p>2 Q That is the "CUP" for short?</p> <p>3 A Yes.</p> <p>4 Q You helped to oversee the CUP as part of its expert panel, true?</p> <p>5 A I'm on an advisory committee for this project.</p> <p>6 Q Take a look at Page 20 of Exhibit No. 4-- actually, Page 19, the acknowledgments section.</p> <p>7 Do you have that in front of you?</p> <p>8 A Yes.</p> <p>9 Q And that lists the panel members, correct?</p> <p>10 A Correct.</p> <p>11 Q And amongst the ten panelists, you are listed, right?</p> <p>12 A Yes.</p> <p>13 Q And the chair is Alan Jackson from the University of Southampton in Southampton, UK, right?</p> <p>14 A Correct.</p> <p>15 Q You are still on the CUP panel today, are you?</p> <p>16 A It's not clear.</p> <p>17 I am advising on survivorship issues.</p> <p>18 It's not clear if this panel will continue.</p> <p>19 My term on it finished very recently, and we are renegotiating who is going to be on it and what it's going to look like for the future.</p> <p>20 Q In 2018--</p>	<p>1 convincing cause of ovarian cancer; is that true?</p> <p>2 A Can you point to where you see this?</p> <p>3 Q Page 5.</p> <p>4 I will direct your attention to the bottom of the page.</p> <p>5 It says, "The CUP panel judges as follows," right?</p> <p>6 A Yes.</p> <p>7 Q And it says the CUP panel-- that's the panel that you sit on, right?</p> <p>8 A Yes.</p> <p>9 Q That isn't the people who write it and that isn't the people who review the science. That's you, right?</p> <p>10 A Correct.</p> <p>11 Q And it says that "The evidence that developmental factors leading to greater linear growth (marked by adult attained height) are a cause of ovarian cancer is convincing."</p> <p>12 That's what the panel wrote, correct, or recommended?</p> <p>13 A That's correct.</p> <p>14 Q Strike that.</p> <p>15 That's what the panel "judged," is the word that's used, correct?</p> <p>16 A Correct.</p> <p>17 Q Is that another way of saying that factors that make some</p>
Page 71	Page 73
<p>1 A I was a part of it, yes--</p> <p>2 Q You need to let me finish.</p> <p>3 In 2018 you were a part of the panel, correct?</p> <p>4 A Correct.</p> <p>5 Q Let's take a look at Page 1 of Exhibit No. 4, which describes the mission with reference to the World Cancer Research Fund Global Network.</p> <p>6 It says, "Our mission: Today the World Cancer Research Fund Global Network continues," and it mentions funding, interpreting the accumulated scientific literature in the field, and educating people about choices, correct?</p> <p>7 A Correct.</p> <p>8 Q And then at the bottom of Page 1 it references the World Cancer Research Fund Global Network, and in that paragraph it references, among others, the American Institute for Cancer Research, which is the AICR, right?</p> <p>9 A Yes.</p> <p>10 Q And on the first-- the cover page of this document, you see the AICR is referenced up at the top with the World Cancer Research Fund, right?</p> <p>11 A Yes.</p> <p>12 Q As a member of the panel, you concluded that developmental factors leading to greater linear growth, which is marked by adult-attained height, are a</p>	<p>1 people taller than others cause ovarian cancer?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: This panel did not do a full causal analysis.</p> <p>4 It does-- its purpose is quite different from the purpose of the report I prepared on talcum powder products and ovarian cancer risk.</p> <p>5 The purpose is not to establish causality but rather to come up with guidelines for those variables that can be interpreted into-- can be interpreted into guidelines.</p> <p>6 There is a set of information on how these different categories are formed, for convincing, probable associations, and then later what can be done for that, what kind of recommendations can be made to the public.</p> <p>7 MR. WILLIAMS: Move to strike that as nonresponsive, Doctor, if we were in court, and I will do that now for the record.</p> <p>8 Q (By Mr. Williams) I would like to ask you to answer my question.</p> <p>9 My question is whether that first paragraph there, under the "CUP panel judges as follows," is that paragraph another way of saying that factors that make some people taller than others cause ovarian cancer?</p> <p>10 MS. PARFITT: Objection; form, asked and answered.</p>

19 (Pages 70 to 73)

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<p style="text-align: right;">Page 74</p> <p>1 THE WITNESS: So I still want to</p> <p>2 under-- state that we didn't do a full causal analysis,</p> <p>3 but there is a statement here that says these are</p> <p>4 causes-- the panel considers the strength strong enough</p> <p>5 that adult height and body fatness are causes of ovarian</p> <p>6 cancer.</p> <p>7 Q (By Mr. Williams) Does "greater linear growth" mean</p> <p>8 height?</p> <p>9 A It may not mean-- so this particular variable is never</p> <p>10 measured.</p> <p>11 You don't have the data in a population to look at</p> <p>12 linear growth over time, and so they were looking at just</p> <p>13 by adult height.</p> <p>14 Because adult height can be-- have so many variables</p> <p>15 associated with it -- genetic, nutrition -- they didn't</p> <p>16 want to assume that it's only genetic association that is</p> <p>17 driving the risk of cancer, so that's why they're talking</p> <p>18 about growth, but it's a difficult variable because you</p> <p>19 can't tell which cause the eventual adult height and</p> <p>20 which of those parts are associated with ovarian cancer</p> <p>21 or any cancer.</p> <p>22 Q You keep saying "they"-- saying "they" in your answers.</p> <p>23 This is you. This is the CUP panel that made that</p> <p>24 judgment that is set forth in Paragraph No. 1, true or</p> <p>25 not true?</p>	<p style="text-align: right;">Page 76</p> <p>1 No. 4, was not exclusively related to diet and exercise,</p> <p>2 was it?</p> <p>3 A I believe it was.</p> <p>4 Q Let me see if I can help you there.</p> <p>5 You consider causes of ovarian cancer other than</p> <p>6 those relating to diet and exercise, true?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 THE WITNESS: From my knowledge the</p> <p>9 meta-analysis work was focused on nutrition variables,</p> <p>10 physical activity variables, and obesity-related</p> <p>11 variables, all because they are related to nutrition, as</p> <p>12 well as lactation because that's also a nutrition-related</p> <p>13 variable.</p> <p>14 Q (By Mr. Williams) Your panel wrote about causes of</p> <p>15 ovarian cancer other than those relating to diet and</p> <p>16 exercise, true?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: The panel did not-- I</p> <p>19 will have to look and see what they said about other</p> <p>20 causes, but the panel was focused on, in terms of the</p> <p>21 meta-analysis, the new data that they are presenting, is</p> <p>22 all related to nutrition, physical activity, and diet.</p> <p>23 Q (By Mr. Williams) Whether it's new data-- strike that.</p> <p>24 First of all, Doctor, you said "they" again.</p> <p>25 You mean you, you mean "our panel," correct?</p>
<p style="text-align: right;">Page 75</p> <p>1 A Correct, it was the panel.</p> <p>2 MS. PARFITT: Objection.</p> <p>3 Q (By Mr. Williams) The second paragraph says, "Greater</p> <p>4 body fatness, which the panel interprets to be marked by</p> <p>5 the body mass index, is probably a cause of ovarian</p> <p>6 cancer."</p> <p>7 Do you see that?</p> <p>8 A Yes.</p> <p>9 Q That was a judgment made by the panel upon which you sit,</p> <p>10 correct?</p> <p>11 A Correct.</p> <p>12 Q The third paragraph says, "The evidence suggesting that</p> <p>13 lactation protects against ovarian cancer is limited."</p> <p>14 That too was a panel judgment made by the panel upon</p> <p>15 which you sit, right?</p> <p>16 A Correct.</p> <p>17 Q The panel that you were on, at least as of 2018, was</p> <p>18 primarily looking at causes of ovarian cancer related to</p> <p>19 diet and exercise; is that accurate?</p> <p>20 A The panel only looks at those related variables.</p> <p>21 Lactation is included because it has some</p> <p>22 nutritional components, but all of the variables that</p> <p>23 this organization looks at and-- that's their mission.</p> <p>24 The nutrition-related variables is what they look at.</p> <p>25 Q But the panel report that is in front of you, Exhibit</p>	<p style="text-align: right;">Page 77</p> <p>1 A When I say "they," the meta-analysis, I did not do the</p> <p>2 meta-analysis.</p> <p>3 the meta-analysis was done by Imperial College.</p> <p>4 The meta-analysis was contracted by World Cancer</p> <p>5 Research Fund to Imperial College to do those</p> <p>6 meta-analysis.</p> <p>7 What the panel did is-- we're a group of scientists.</p> <p>8 We review those data once they're done.</p> <p>9 Q You review the data once it's done?</p> <p>10 A Once it's done.</p> <p>11 Q And you make recommendations as a panel member, correct?</p> <p>12 A We make judgments.</p> <p>13 The recommendations are a combination of us and</p> <p>14 WCRF.</p> <p>15 Q One of the judgments that is-- strike that.</p> <p>16 On Page 7 of the document, Exhibit No. 4, there is a</p> <p>17 listing entitled, "Other established causes."</p> <p>18 Do you see that?</p> <p>19 A Yes.</p> <p>20 Q And those are established causes of ovarian cancer,</p> <p>21 correct?</p> <p>22 A Correct.</p> <p>23 Q That paragraph--</p> <p>24 A Sorry, say that again.</p> <p>25 Q The other established causes that are being referred to</p>

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<p style="text-align: right;">Page 78</p> <p>1 here are established causes of ovarian cancer, correct?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 Q (By Mr. Williams) Do you understand my question?</p> <p>4 A I do.</p> <p>5 What I'm trying to say-- what I want to say here is</p> <p>6 there was no systematic review done here.</p> <p>7 This was information that was largely taken from the</p> <p>8 second expert report and repeated here, so this was data</p> <p>9 from 2007-- information from 2007, and there was no--</p> <p>10 except for lactation, among all these variables there was</p> <p>11 no new review done by the panel.</p> <p>12 This was the knowledge at the time of the second</p> <p>13 annual report, 2007, of variables that are-- that the</p> <p>14 2007 expert panel thought were related to ovarian cancer.</p> <p>15 Q Hold on, Doctor.</p> <p>16 In 2014, which is the date of this document, you</p> <p>17 were sitting on the World Cancer Research Fund's panel,</p> <p>18 correct?</p> <p>19 A Correct.</p> <p>20 Q The panel reviews the results of the epidemiological</p> <p>21 analysis that is done by others, correct?</p> <p>22 A Reviews the data, the meta-analysis from the nutrition</p> <p>23 variables, yes.</p> <p>24 Q And then it sets forth judgments and it writes the text</p> <p>25 that appears in this document, correct?</p>	<p style="text-align: right;">Page 80</p> <p>1 probable cause of ovarian cancer, true?</p> <p>2 A If you're talking about this paragraph, I don't see it</p> <p>3 there.</p> <p>4 Q And this paragraph does not describe talc as a risk</p> <p>5 factor for ovarian cancer, such as hormone replacement</p> <p>6 therapy, correct?</p> <p>7 A Talcum powder products are not mentioned there, correct.</p> <p>8 Q This 2004 CUP report-- strike that.</p> <p>9 Did this 2014 CUP report come out before or after</p> <p>10 Plaintiffs' counsel hired you as an expert in this case?</p> <p>11 A This came out before I was hired.</p> <p>12 This was a 2014 report.</p> <p>13 We may have downloaded this recently.</p> <p>14 The way these reports work is the work for the</p> <p>15 meta-analysis is done, and then the panel reviews the</p> <p>16 data, and then a report is drafted and published online</p> <p>17 at that time, so if it says, "2014," then it would have</p> <p>18 been online in 2014, would have been public then.</p> <p>19 Q And there have been reports that have been prepared by</p> <p>20 the World Cancer Research Fund and the American Institute</p> <p>21 for Cancer Research since this 2014 report, right?</p> <p>22 MS. PARFITT: Objection to the form.</p> <p>23 THE WITNESS: Different cancers would</p> <p>24 have been since then.</p> <p>25 I don't have memorized exactly when the different</p>
<p style="text-align: right;">Page 79</p> <p>1 A The panel did not write this text.</p> <p>2 The panel-- the World Cancer Research Fund wrote</p> <p>3 this text.</p> <p>4 Q Are you disavowing Page 7, third paragraph, "Other</p> <p>5 established causes," that's set forth other established</p> <p>6 causes for ovarian cancer?</p> <p>7 MS. PARFITT: Objection; form,</p> <p>8 misstates her testimony.</p> <p>9 THE WITNESS: The question was am I</p> <p>10 disavowing-- I am not disavowing.</p> <p>11 I am saying it was not written by our panel.</p> <p>12 We reviewed it. We had opportunity to have input,</p> <p>13 but we were not the final authors of this section.</p> <p>14 Q (By Mr. Williams) When you read the section, did you</p> <p>15 say, "Wait a minute, you haven't included anything in</p> <p>16 here about talc causing ovarian cancer"?</p> <p>17 Did you tell anybody that?</p> <p>18 A I don't recall doing that.</p> <p>19 At the time I had not done a full analysis of</p> <p>20 ovarian cancer risk factors.</p> <p>21 Q When you say that you don't recall doing it, are you</p> <p>22 saying it might have happened, it might not have</p> <p>23 happened, or are you saying that it did not happen?</p> <p>24 A It did not happen.</p> <p>25 Q This document does not include talc as a cause or</p>	<p style="text-align: right;">Page 81</p> <p>1 years came out.</p> <p>2 In-- last spring, and I think it was 2018, but it</p> <p>3 could have been 2017, there was a final report of WCRF</p> <p>4 that included all of these reports, but this was not</p> <p>5 changed at that time.</p> <p>6 The final report that came out was more of a global</p> <p>7 summary and global nutrition recommendations, but these</p> <p>8 all-- that's why it's called the Continuous Update</p> <p>9 Project, because these things are updated at various</p> <p>10 points and then they become part of that final report,</p> <p>11 2017, 2018.</p> <p>12 This is why I was-- I said that the panel may be</p> <p>13 reconstituted, because we finished one set of cancers,</p> <p>14 one set of reports.</p> <p>15 Q (By Mr. Williams) The whole idea of the CUP reports is</p> <p>16 that they get updated continuously, right?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: The ovarian cancer was</p> <p>19 not updated after 2014.</p> <p>20 Is that your question?</p> <p>21 Q (By Mr. Williams) Are you sure about that?</p> <p>22 A From my knowledge it was not updated.</p> <p>23 Q Take a look at Page 2 of Exhibit No. 4 that you have.</p> <p>24 At the top of Page 2 it says, "Please cite the</p> <p>25 report as follows," and it gives instructions about how</p>

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<p>1 the report should be cited, correct?</p> <p>2 A Yes.</p> <p>3 Q It's accurate to say that the expectation of the</p> <p>4 publication of this report is that it may be cited by</p> <p>5 others, right?</p> <p>6 A Yes.</p> <p>7 Q That's why you have this at the top of Page No. 2,</p> <p>8 correct?</p> <p>9 A Yes.</p> <p>10 Q Let me show you another document, which we'll mark as</p> <p>11 Exhibit No. 5.</p> <p>12 (Exhibit No. 5 marked</p> <p>13 for identification.)</p> <p>14</p> <p>15 Q (By Mr. Williams) Exhibit No. 5, for the record, is a</p> <p>16 multi-page document that says, "Diet, nutrition, physical</p> <p>17 activity and ovarian cancer - revised 2018" on the cover</p> <p>18 page.</p> <p>19 Do you see that?</p> <p>20 A Yes.</p> <p>21 Q The CUP expert panel that you sat on through 2018 issued</p> <p>22 this collection of reports entitled, "Diet, nutrition,</p> <p>23 physical activity and cancer, a global perspective,"</p> <p>24 right?</p> <p>25 A Yes.</p>	<p>1 A Correct.</p> <p>2 Q The CUP expert panel that you sat on through last year is</p> <p>3 in fact the body that issues these reports, like Exhibit</p> <p>4 No. 5, correct?</p> <p>5 A Correct.</p> <p>6 Q Now let me have you look at Exhibit No. 5, which is the</p> <p>7 2018 CUP report.</p> <p>8 I will just quickly refer you to Page 4.</p> <p>9 On Page 4 there's a heading that says, "Our</p> <p>10 Continuous Update Project, CUP"-- do you see that?</p> <p>11 A Yes.</p> <p>12 MS. PARFITT: Give her just one</p> <p>13 moment.</p> <p>14 Q (By Mr. Williams) And then the second paragraph says,</p> <p>15 "An independent panel of experts carries out ongoing</p> <p>16 evaluations of this evidence, and their findings form the</p> <p>17 basis of the WCRF network's cancer prevention</p> <p>18 recommendations."</p> <p>19 Do you see that?</p> <p>20 A Yes.</p> <p>21 Q That's referring to your panel, correct?</p> <p>22 A Yes.</p> <p>23 Q And if you look at the back of this document that's on</p> <p>24 Page 21, in the acknowledgments section, it lists the</p> <p>25 panel members.</p>
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<p>1 Q This is the most recent version of the Continuous Update</p> <p>2 Project report that we were just looking at, right?</p> <p>3 A Yes.</p> <p>4 Q Let me show you another document, which is-- we'll mark</p> <p>5 as Exhibit No. 6.</p> <p>6 (Exhibit No. 6 marked</p> <p>7 for identification.)</p> <p>8</p> <p>9 Q (By Mr. Williams) I will ask you to keep Exhibit No. 5</p> <p>10 nearby.</p> <p>11 Exhibit No. 6, I will represent to you, is the CUP</p> <p>12 panel web page, which we printed out on January 7th,</p> <p>13 2019.</p> <p>14 Are you pictured in the picture there?</p> <p>15 A Yes.</p> <p>16 Q Is that you five people over from the right?</p> <p>17 A Yes.</p> <p>18 Q Above the photo that you appear in, do you see where it</p> <p>19 says, "In 2018 the expert panel, chaired by Professor</p> <p>20 Alan Jackson, issued our latest cancer prevention</p> <p>21 recommendations as part of the World Cancer Research</p> <p>22 Fund/American Institute for Cancer Research third expert</p> <p>23 report, "Diet, nutrition, physical activity and cancer: a</p> <p>24 global perspective."</p> <p>25 That's what it says, correct?</p>	<p>1 I've counted. There are now nine panelists as of</p> <p>2 2018, and you are listed as one, correct?</p> <p>3 A You are looking at-- sorry, which?</p> <p>4 Q Page 21 of Exhibit No. 5.</p> <p>5 Do you see it listed there on Page 21?</p> <p>6 A Yes.</p> <p>7 Q Now, please go back to Page 6 of Exhibit No. 5, the 2018</p> <p>8 report of the World Cancer Research Fund.</p> <p>9 Under the box "Summary of panel judgments," do you</p> <p>10 see there that the same conclusions that were set forth</p> <p>11 in the 2014 report concerning the panel judgments are set</p> <p>12 forth?</p> <p>13 A So you are talking about this table--</p> <p>14 Q If you look in the lower left-hand corner of the page, it</p> <p>15 has Page No. 6.</p> <p>16 Are you looking at the 2018--</p> <p>17 A It says, "Summary of panel judgments."</p> <p>18 Q Correct, and do you see the box that's underneath there</p> <p>19 with subheadings?</p> <p>20 A Yeah.</p> <p>21 One thing to point out is that this table, which is</p> <p>22 the summary-- so you are in Exhibit No. 5 ? It says,</p> <p>23 "2014," so it's the exact same as this 2014 report.</p> <p>24 Q Ma'am, I am not even looking at that page.</p> <p>25 A Okay.</p>

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<p>1 Q I am asking you to look at Page 6.</p> <p>2 A Page 6.</p> <p>3 Q Which says, "The summary of the panel judgments."</p> <p>4 A Okay.</p> <p>5 Q In that summary of the panel judgments it sets forth the</p> <p>6 same conclusions that were contained in the 2014 report</p> <p>7 regarding linear growth, body fatness, and lactation,</p> <p>8 correct?</p> <p>9 A That's correct.</p> <p>10 Q There's no reference to talcum powder here either,</p> <p>11 correct?</p> <p>12 A That's correct.</p> <p>13 Q As of 2018 you had been retained as an expert by the</p> <p>14 plaintiffs' lawyers in this litigation; is that correct?</p> <p>15 MS. PARFITT: Objection; form.</p> <p>16 THE WITNESS: The summaries are</p> <p>17 regarding the data analyzed by WCRF on nutrition</p> <p>18 variables.</p> <p>19 They do not consider-- they do not do systematic</p> <p>20 reviews for other ovarian cancer risk factors, only</p> <p>21 nutrition variables.</p> <p>22 Q (By Mr. Williams) Let me ask you to go to Page 3.</p> <p>23 Again in your last answer you said "they."</p> <p>24 You are a panelist for this organization, correct?</p> <p>25 A Yes, I am a panelist, but I don't-- I am not in a</p>	<p>1 in 2018, which is after you had been retained by</p> <p>2 plaintiff lawyers to opine on whether or not talc could</p> <p>3 cause ovarian cancer, true or not true?</p> <p>4 MS. PARFITT: Objection; form, asked</p> <p>5 and answered.</p> <p>6 THE WITNESS: I want to be able to</p> <p>7 answer this to try to make it more clear.</p> <p>8 If you see on the cover, it says, "2014."</p> <p>9 This is the 2014 report that was added to all of the</p> <p>10 other reports.</p> <p>11 Some were developed in 2011, some in 2017.</p> <p>12 We did not redo the meta-analyses. We did not redo</p> <p>13 the entire report.</p> <p>14 They were added together.</p> <p>15 The World Cancer Research Fund for the first two</p> <p>16 reports did all of the work at one time and came up with</p> <p>17 books, so the most recent one was 2007.</p> <p>18 This time they decided to do reports on a rolling</p> <p>19 basis. That's why Ovarian came out in 2014, but that</p> <p>20 their final-- when they put it all together, they</p> <p>21 celebrate, come out with big systematic-- sorry, summary</p> <p>22 guidelines for the public for preventing cancer-related</p> <p>23 nutrition, physical activity, things that people can do--</p> <p>24 that was all added together in 2018, but this ovarian</p> <p>25 report was from 2014.</p>
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<p>1 position to choose what WCRF decides to contract out for</p> <p>2 analyses.</p> <p>3 They contract with the Imperial College of what the</p> <p>4 focus is going to be: nutrition, physical activity, diet.</p> <p>5 It's my-- I have the ability to refuse to be on the</p> <p>6 panel, to decline if I don't want to be involved with</p> <p>7 nutrition, physical activity, and obesity research</p> <p>8 because that's the mission. The mission are those</p> <p>9 variables, not to do systematic reviews on other risk</p> <p>10 factors.</p> <p>11 We don't do anything on cigarette smoking or other</p> <p>12 types of carcinogens, for example.</p> <p>13 We only do nutrition, physical activity,</p> <p>14 obesity-related variables.</p> <p>15 Q To be clear, this CUP update on ovarian cancer came out</p> <p>16 in 2018, which is after you were retained by plaintiff</p> <p>17 lawyers to opine on whether or not talc could cause</p> <p>18 ovarian cancer.</p> <p>19 Is that true or not true?</p> <p>20 MS. PARFITT: Objection; form, asked</p> <p>21 and answered.</p> <p>22 Q (By Mr. Williams) I am looking for a temporal answer.</p> <p>23 This--</p> <p>24 MS. PARFITT: Same objection.</p> <p>25 Q (By Mr. Williams) This update on ovarian cancer came out</p>	<p>1 MR. WILLIAMS: I will move to strike</p> <p>2 that as nonresponsive.</p> <p>3 Q (By Mr. Williams) Dr. McTiernan, on the first page of</p> <p>4 this document it says it was revised in 2018.</p> <p>5 This document that's in front of you now was</p> <p>6 published in 2018, wasn't it?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 She has been asked and answered it.</p> <p>9 You have limited time, Mr. Williams, so I suggest</p> <p>10 you listen to her answer.</p> <p>11 Q (By Mr. Williams) This document was published in 2018,</p> <p>12 yes or no?</p> <p>13 MS. PARFITT: Objection; form, asked</p> <p>14 and answered.</p> <p>15 THE WITNESS: This document was</p> <p>16 published along with all of the other documents, but the</p> <p>17 document was prepared in 2014.</p> <p>18 It's a report in 2014.</p> <p>19 Q (By Mr. Williams) What year was this document published?</p> <p>20 MS. PARFITT: The document speaks for</p> <p>21 itself. Objection; form.</p> <p>22 THE WITNESS: It says, "Revised 2018."</p> <p>23 Q (By Mr. Williams) 2018 was after you were retained by</p> <p>24 Plaintiffs' counsel, correct?</p> <p>25 MS. PARFITT: Objection; form,</p>

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<p style="text-align: right;">Page 90</p> <p>1 mischaracterizes her testimony.</p> <p>2 Q (By Mr. Williams) You may answer, Doctor.</p> <p>3 MS. PARFITT: Objection; form.</p> <p>4 Answer as best you can.</p> <p>5 THE WITNESS: Yes, 2018 is after I was</p> <p>6 retained.</p> <p>7 Q (By Mr. Williams) It was a couple years after you had</p> <p>8 been retained, right?</p> <p>9 A That's correct.</p> <p>10 Q Could you list for me all of the members of the panel who</p> <p>11 served with you on the World Cancer Research Fund whom</p> <p>12 you told, "We need to update this to state that talc,</p> <p>13 which is something that people can use or not use, is</p> <p>14 something that they should not use because it causes</p> <p>15 ovarian cancer"?</p> <p>16 List for me the people who are listed on Page 21, as</p> <p>17 fellow panel members, all of the people that you have</p> <p>18 told that.</p> <p>19 A I didn't talk with others about other risk factors for</p> <p>20 ovarian cancer because we were using the same report</p> <p>21 unchanged from 2014.</p> <p>22 Q Is the answer that there's no one?</p> <p>23 MS. PARFITT: Objection; misstates her</p> <p>24 testimony.</p> <p>25 Q (By Mr. Williams) Is the answer that there is no one</p>	<p style="text-align: right;">Page 92</p> <p>1 This says, "Our cancer prevention recommendations."</p> <p>2 When it says "our" there, that refers to the panel</p> <p>3 on which you sat in 2018, correct?</p> <p>4 A This is correct.</p> <p>5 This is a separate document.</p> <p>6 It must have been from the ovarian report because</p> <p>7 this is-- there are separate recommendations based on all</p> <p>8 of the cancers.</p> <p>9 Q The panel does not recommend limiting or stopping the use</p> <p>10 of talcum powder, correct?</p> <p>11 A The panel did not look at all potential carcinogens.</p> <p>12 The panel looked and developed recommendations based</p> <p>13 on nutrition, physical activity, and obesity-related</p> <p>14 variables.</p> <p>15 Q Is the answer that it does not list talc?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 THE WITNESS: It does not list talc,</p> <p>18 but it doesn't list other carcinogens as well.</p> <p>19 Q (By Mr. Williams) Please turn to Page 8.</p> <p>20 I am referring to Page 8 of the 2018 CUP report.</p> <p>21 I will direct your attention to Section 4 at the top</p> <p>22 that says, "Other established causes."</p> <p>23 Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Not bearing children is listed as something that may be</p>
<p style="text-align: right;">Page 91</p> <p>1 there?</p> <p>2 MS. PARFITT: Objection; form,</p> <p>3 misstates her testimony.</p> <p>4 Q (By Mr. Williams) You may answer.</p> <p>5 A Correct.</p> <p>6 MS. PARFITT: You may answer.</p> <p>7 Q (By Mr. Williams) Is the answer correct?</p> <p>8 A Correct.</p> <p>9 MS. PARFITT: Objection.</p> <p>10 MR. WILLIAMS: Counsel, I am entitled</p> <p>11 to an answer to the question.</p> <p>12 MS. PARFITT: You can, and I'm</p> <p>13 entitled to object to the form.</p> <p>14 MR. WILLIAMS: But you are objecting</p> <p>15 over her answer.</p> <p>16 MS. PARFITT: No, I am objecting-- she</p> <p>17 is answering quite quickly. I am trying to object before</p> <p>18 she answers, but after you.</p> <p>19 MR. WILLIAMS: Fair enough.</p> <p>20 MS. PARFITT: Thanks.</p> <p>21 Q (By Mr. Williams) Please turn to the second-to-last page</p> <p>22 of this 2018 CUP report, which is entitled, "Our cancer</p> <p>23 prevention recommendations."</p> <p>24 It is a purple page. It is the inside cover of the</p> <p>25 pamphlet.</p>	<p style="text-align: right;">Page 93</p> <p>1 seen as a cause of ovarian cancer, correct?</p> <p>2 A Correct.</p> <p>3 Q Early menarche or age of first period is listed as</p> <p>4 something that your panel concluded may be seen as a</p> <p>5 cause of ovarian cancer, true?</p> <p>6 A It wasn't a panel conclusion. We weren't asked to judge</p> <p>7 data.</p> <p>8 This was written up as a background for other</p> <p>9 potential causes.</p> <p>10 There were no data that was reviewed by the panel.</p> <p>11 Q The heading is, "Other established causes," right?</p> <p>12 A Right.</p> <p>13 WCRF prefers to use that language. I'm not sure I</p> <p>14 would have used that.</p> <p>15 Q Talc is not listed as an established cause, correct?</p> <p>16 A It is not.</p> <p>17 It looks like the paragraph was unchanged from 2014.</p> <p>18 It was not updated.</p> <p>19 This report, from my knowledge, is the same in 2014</p> <p>20 as this-- as what's called "Revised," but I believe it's</p> <p>21 the same report.</p> <p>22 Q Did you, as a member of this expert panel, conclude that</p> <p>23 talc could be seen as a cause of ovarian cancer?</p> <p>24 A This expert panel didn't consider talc.</p> <p>25 Q Is the answer "no?"</p>

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<p style="text-align: right;">Page 94</p> <p>1 MS. PARFITT: Objection; form--</p> <p>2 THE WITNESS: All I can say is we</p> <p>3 didn't consider-- we didn't review the literature. We</p> <p>4 didn't do-- review any of these other variables in</p> <p>5 totality.</p> <p>6 Q (By Mr. Williams) Is there any reason why you don't do</p> <p>7 that?</p> <p>8 A We were tasked at looking at nutrition, physical</p> <p>9 activity, and obesity-related variables.</p> <p>10 Q Tasked by whom?</p> <p>11 A By WCRF, World Cancer Research Fund.</p> <p>12 Q Did the World Cancer Research Fund say that you could not</p> <p>13 look into talc?</p> <p>14 MS. PARFITT: Objection; form.</p> <p>15 THE WITNESS: They did-- in our</p> <p>16 personal lives, that we could look into any variable you</p> <p>17 wanted to, but for this purpose of this panel, we were</p> <p>18 only looking at and evaluating the meta-analysis, which</p> <p>19 was focused on physical activity, diet, and nutrition</p> <p>20 variables.</p> <p>21 Q (By Mr. Williams) Let me ask you to turn to Page 7 of</p> <p>22 the CUP report.</p> <p>23 A Which one?</p> <p>24 Q Page 7 of the 2018 report, Exhibit No. 5.</p> <p>25 A Okay.</p>	<p style="text-align: right;">Page 96</p> <p>1 cancers.</p> <p>2 "Spontaneous" means something else caused it.</p> <p>3 Q However you define "spontaneous," do you agree that most</p> <p>4 ovarian cancers occur spontaneously?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: I agree that most-- I</p> <p>7 would not use that word myself because it can be</p> <p>8 misconstrued by nonscientists.</p> <p>9 "Spontaneous" means "nongenetically inherited," so I</p> <p>10 would say environmental, that most cancers-- most ovarian</p> <p>11 cancers are caused by something in the environment, some</p> <p>12 exposure.</p> <p>13 Q (By Mr. Williams) Did you tell someone to take out the</p> <p>14 word "spontaneously"?</p> <p>15 A I don't recall.</p> <p>16 We did have an opportunity in 2014 to edit these</p> <p>17 various reports.</p> <p>18 None of us had final say on exactly what came out of</p> <p>19 the report.</p> <p>20 We did go through a process of editing.</p> <p>21 Q When you had the opportunity to edit the report in 2014,</p> <p>22 did you ask someone to take out the word "spontaneously"?</p> <p>23 A I don't recall.</p> <p>24 Q When you say you don't recall, are you saying it may have</p> <p>25 happened, it may not have happened?</p>
<p style="text-align: right;">Page 95</p> <p>1 Q Do you see the heading that says, "Pathogenesis"?</p> <p>2 A Yes.</p> <p>3 Q Do you see where in the second paragraph the panel</p> <p>4 concluded that the-- quote, "Most ovarian cancers occur</p> <p>5 spontaneously, although five to ten percent of cases</p> <p>6 develop due to a genetic disposition," Closed quote?</p> <p>7 Do you see that?</p> <p>8 A I see that, and above that I see that "The epithelial</p> <p>9 cells are subjected to a unique pro-inflammatory</p> <p>10 microenvironment, which can increase the rate of DNA</p> <p>11 damage, thus affecting cancer risk."</p> <p>12 In this case the word "spontaneous" just means "as</p> <p>13 opposed to genetics."</p> <p>14 Spontaneous cancers mean they can be caused by</p> <p>15 anything else, including environment, but not solely due</p> <p>16 to an inherited genetic predisposition.</p> <p>17 Q Do you agree that most ovarian cancers occur</p> <p>18 spontaneously?</p> <p>19 A I believe most are caused by environmental causes as for</p> <p>20 many other cancers.</p> <p>21 I am using the word "spontaneous." I mean "non</p> <p>22 solely genetic."</p> <p>23 Cancer is a genetic disease, but the familial</p> <p>24 genetic-inherited cancers account for only about five to</p> <p>25 ten percent of ovarian cancers, similar to many other</p>	<p style="text-align: right;">Page 97</p> <p>1 A It may have happened, it may not.</p> <p>2 I apologize, I don't recall.</p> <p>3 Q And after you make such a recommendation as a panelist,</p> <p>4 who decides what gets put in?</p> <p>5 A The World Cancer Research Fund. The scientific officers</p> <p>6 would decide.</p> <p>7 Q They would listen to the input and then decide one way or</p> <p>8 the other?</p> <p>9 A Yes.</p> <p>10 Q In 2014 the Gertig 2000 and Terry 2013 studies on talc,</p> <p>11 that you reviewed in 2016, had already been published,</p> <p>12 correct?</p> <p>13 A I am hesitating because I don't remember when this exact</p> <p>14 writing was.</p> <p>15 If it's a 2014 report, that's when it came out.</p> <p>16 It could have been being written within 2013, so at</p> <p>17 the time I was not doing research on all of the variables</p> <p>18 related to ovarian cancer, so I can't say what was</p> <p>19 published at that time.</p> <p>20 Q 2014 is after 2013, correct?</p> <p>21 A That's correct.</p> <p>22 Q If Gertig was published in 2000, Gertig would have been</p> <p>23 published prior to the time that this exhibit, the 2014</p> <p>24 version of this exhibit, was published, correct?</p> <p>25 A Published but perhaps not when it was prepared, that's</p>

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<p style="text-align: right;">Page 98</p> <p>1 what I'm saying.</p> <p>2 Q If the Terry study was published in 2013, it would have</p> <p>3 been published prior to the time that the 2014 version of</p> <p>4 the World Cancer Research Fund would have been published,</p> <p>5 correct?</p> <p>6 A It would have been published prior to publication, not</p> <p>7 necessarily prior to report preparation.</p> <p>8 Q Have you ever been on the World Cancer Research Fund web</p> <p>9 page?</p> <p>10 A Yes, I have.</p> <p>11 Q Let me show you what we've marked as Exhibit No. 7 or</p> <p>12 what we will mark as Exhibit No. 7 to your deposition.</p> <p>13 (Exhibit No. 7 marked</p> <p>14 for identification.)</p> <p>15</p> <p>16 Q (By Mr. Williams) Exhibit No. 7 is the World Cancer</p> <p>17 Research Fund web page.</p> <p>18 We printed this out as of January 8th, 2019.</p> <p>19 It's a five-page document, and the portion that we</p> <p>20 printed out is "Myths and controversies about what causes</p> <p>21 cancer."</p> <p>22 Do you see that?</p> <p>23 A Yes, I do.</p> <p>24 Q There is only one World Cancer Research Fund, to your</p> <p>25 knowledge, correct?</p>	<p style="text-align: right;">Page 100</p> <p>1 if you are trying to get to the World Cancer Research</p> <p>2 Fund website.</p> <p>3 Will you accept that representation, ma'am?</p> <p>4 A It looks like it comes from their website.</p> <p>5 I am not clear on who developed this or-- it</p> <p>6 certainly didn't have oversight by our committee.</p> <p>7 Our committee was tasked at looking at the data from</p> <p>8 the meta-analysis and systematic review.</p> <p>9 None of these variables-- none of the variables</p> <p>10 here, except perhaps coffee, were considered by my panel.</p> <p>11 My panel does not oversee all World Cancer Research</p> <p>12 Fund. There are other groups that oversee them.</p> <p>13 I do not.</p> <p>14 I oversee-- sorry, I participate on one panel that</p> <p>15 focuses on nutrition, physical activity, and diet</p> <p>16 meta-analyses.</p> <p>17 Q Take a look at Page 2 of this document, which is Exhibit</p> <p>18 No. 7.</p> <p>19 At the top of the page it says, "Cosmetics and</p> <p>20 toiletries."</p> <p>21 Do you see that?</p> <p>22 A I do.</p> <p>23 Q It says, "Most studies have found no link between cancer</p> <p>24 and the chemicals used in cosmetic and toiletry products,</p> <p>25 such as moisturizers, shampoos, deodorants, and</p>
<p style="text-align: right;">Page 99</p> <p>1 A That's correct.</p> <p>2 Q The World Cancer Research Fund, the organization for whom</p> <p>3 you have served as an advisory panel member for years,</p> <p>4 tries to advise the public about potential causes for</p> <p>5 cancer, correct?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 THE WITNESS: Their focus is on</p> <p>8 nutrition, physical activity, and obesity variables.</p> <p>9 That's what they advise on. That's what their</p> <p>10 recommendations are.</p> <p>11 Q (By Mr. Williams) The World Cancer Research Fund tries</p> <p>12 to debunk myths about what has been established as a</p> <p>13 cause of cancer, correct?</p> <p>14 MS. PARFITT: Objection; form.</p> <p>15 THE WITNESS: Before I answer that, I</p> <p>16 would like to know if this is a Blount post.</p> <p>17 If it's not-- it's not something that has come</p> <p>18 before the World Cancer Research Fund.</p> <p>19 We would never investigate or were never asked to</p> <p>20 comment on these particular issues.</p> <p>21 Q (By Mr. Williams) I will represent to you that the</p> <p>22 address that is listed at the bottom of the page, which</p> <p>23 includes</p> <p>24 www.wcrf-uk.org/uk/preventing-cancer/cancer-risk-factors-</p> <p>25 and it goes on, is, in fact, where you get-- where you go</p>	<p style="text-align: right;">Page 101</p> <p>1 toothpastes. The majority of countries have strict</p> <p>2 regulations to ensure these products are safe."</p> <p>3 Do you see that?</p> <p>4 A Yes.</p> <p>5 Q It goes on, second paragraph, "Some studies have found a</p> <p>6 link between talcum powder, talc, and ovarian cancer, but</p> <p>7 there is not enough evidence to be certain of this. Even</p> <p>8 if there were an increased risk, scientists estimate it</p> <p>9 would be small. Not smoking, followed by maintaining a</p> <p>10 healthy weight through eating a healthy diet and keeping</p> <p>11 active, are the most effective ways to reduce your cancer</p> <p>12 risk."</p> <p>13 Did I read that right?</p> <p>14 A Yes, you did.</p> <p>15 Q Do you disagree with that statement of the World Cancer</p> <p>16 Research Fund?</p> <p>17 A I do.</p> <p>18 I am surprised it's there.</p> <p>19 Q Is it accurate to say that your opinion in this case that</p> <p>20 the state of known scientific evidence establishes that</p> <p>21 perineal use of talc causes ovarian cancer conflicts with</p> <p>22 the conclusion set forth on the website of the World</p> <p>23 Cancer Research Fund that there is not enough evidence to</p> <p>24 be certain that there is a link between talcum powder use</p> <p>25 and ovarian cancer?</p>

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<p>1 MS. PARFITT: Objection; form,</p> <p>2 misstates the document.</p> <p>3 THE WITNESS: I do disagree.</p> <p>4 Q (By Mr. Williams) Your opinion in this case conflicts</p> <p>5 with the--</p> <p>6 A Yes, my opinion conflicts--</p> <p>7 Q You need to wait until I'm done, ma'am if you would.</p> <p>8 A Okay.</p> <p>9 Q Your opinion in this case, as set forth in your report,</p> <p>10 conflicts with the conclusions set forth specifically</p> <p>11 regarding talcum powder on the World Cancer Research Fund</p> <p>12 website, correct?</p> <p>13 MS. PARFITT: Objection to the form.</p> <p>14 THE WITNESS: Yes, that's correct.</p> <p>15 Q (By Mr. Williams) The American Institute for Cancer</p> <p>16 Research tries to advise the public regarding potential</p> <p>17 causes of cancer; is that right?</p> <p>18 MS. PARFITT: Objection; form,</p> <p>19 misstates her testimony.</p> <p>20 THE WITNESS: The American Institute</p> <p>21 for Cancer Research is part of the World Cancer Research</p> <p>22 Foundation, and they have the same mission, to focus on</p> <p>23 nutrition, physical activity, and obesity in relation to</p> <p>24 cancer risk and survival.</p> <p>25 Q (By Mr. Williams) Did you know that the American</p>	<p>1 A Yes.</p> <p>2 Q And the second paragraph that's listed there on Exhibit</p> <p>3 No. 8 is identical to the paragraph that we just went</p> <p>4 over in Exhibit No. 7 relating to talcum powder and</p> <p>5 ovarian cancer; is that right?</p> <p>6 A Yes, I see that.</p> <p>7 Q Is it accurate to say that your opinion in this case,</p> <p>8 that the state of known scientific evidence establishes</p> <p>9 that perineal use of talc causes ovarian cancer,</p> <p>10 conflicts with the conclusion of the American Institute</p> <p>11 for Cancer Research, that there is not enough evidence to</p> <p>12 be certain that there is a link between talc use and</p> <p>13 ovarian cancer?</p> <p>14 MS. PARFITT: Objection; form.</p> <p>15 THE WITNESS: Yes, I disagree with</p> <p>16 what they have written here.</p> <p>17 Q (By Mr. Williams) You have never told anyone from the</p> <p>18 AICR, I take it, that you disagree?</p> <p>19 MS. PARFITT: Objection; form.</p> <p>20 THE WITNESS: I did not know that they</p> <p>21 had this on their website.</p> <p>22 I think I will talk to them now.</p> <p>23 Q (By Mr. Williams) Let me direct your attention to a new</p> <p>24 document, which is an article from Hutch News that refers</p> <p>25 to you.</p>
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<p>1 Institute for Cancer Research includes a page on its</p> <p>2 website discussing whether different exposures can cause</p> <p>3 cancer?</p> <p>4 A I would have to see it, but no, I do not follow whatever</p> <p>5 page you're talking about.</p> <p>6 I don't know what you're referring to.</p> <p>7 (Exhibit No. 8 marked</p> <p>8 for identification.)</p> <p>9</p> <p>10 Q (By Mr. Williams) Let me show you what we've marked as</p> <p>11 Exhibit No. 8.</p> <p>12 Exhibit No. 8 is a three-page document, which is a</p> <p>13 printout of the website of the AICR. The address is</p> <p>14 listed at the bottom of Page 1 of Exhibit No. 8.</p> <p>15 You are familiar with the American Institute for</p> <p>16 Cancer Research?</p> <p>17 A Yes, I am.</p> <p>18 It is a part of the World Cancer Research Fund.</p> <p>19 Q I would like you to look at the first page of Exhibit</p> <p>20 No. 8.</p> <p>21 There is a listing that says, "GMOs and other hot</p> <p>22 topics," and then there are seven different topics that</p> <p>23 are set forth, the fifth of which is cosmetics and</p> <p>24 toiletries.</p> <p>25 Do you see that?</p>	<p>1 We'll mark it as Exhibit No. 9.</p> <p>2 (Exhibit No. 9 marked</p> <p>3 for identification.)</p> <p>4</p> <p>5 Q (By Mr. Williams) This is an article that was published</p> <p>6 on May 25th, 2018, correct?</p> <p>7 It's a commentary written by you?</p> <p>8 A Yes. It was edited by-- our communications department</p> <p>9 edited it, so I authored it, but they adjusted it.</p> <p>10 Q May 25, 2018 was at least a year and a half after you had</p> <p>11 been retained by plaintiffs' counsel for this engagement,</p> <p>12 correct?</p> <p>13 MR. LOCKE: We haven't seen Exhibit</p> <p>14 No.--</p> <p>15 Q (By Mr. Williams) Did you hear my question?</p> <p>16 A No-- yes.</p> <p>17 Q You're quoted in this article-- strike that.</p> <p>18 The title of your article is, "How to reduce the</p> <p>19 odds of getting cancer," right?</p> <p>20 A Yes.</p> <p>21 Q You are quoted in this article as saying there are steps</p> <p>22 people can take to absolutely cut their risk of getting</p> <p>23 cancer, true?</p> <p>24 A Yes.</p> <p>25 Q Directly under the title there's a quote that says,</p>

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<p style="text-align: right;">Page 106</p> <p>1 "There are steps you can take that will absolutely cut 2 your risk, says Fred Hutch's doctor Anne McTiernan, who 3 contributed to a new report on diet, nutrition, physical 4 activity and cancer," did I read that right? 5 A Yes. 6 Q Now, at the time that you were writing this commentary, I 7 take it that you were not limited in any way in what you 8 could talk about as a way that someone could cut their 9 risk of getting cancer? 10 No one was editing your words, true? 11 A That's not true. 12 The communications department has final say on what 13 goes out from our institution, so I don't have full 14 leeway of what went out. 15 They had asked me to write about something, with 16 their help, their editing, on the new report by the World 17 Cancer Research Fund, so it focused primarily on 18 nutrition, physical activity, and diet information. 19 Q Are you suggesting that you could not have referenced 20 talcum powder or stopping the use of talcum powder as it 21 relates to your view of ovarian cancers, ma'am? 22 A I am saying I was asked to focus on these variables in 23 this new report. 24 Fred Hutchinson is-- the communications department 25 is a news program-- sorry, a news service-- they call</p>	<p style="text-align: right;">Page 108</p> <p>1 MS. PARFITT: Objection; form. 2 THE WITNESS: When we do a causation 3 analysis as epidemiologists, we primarily rely on results 4 in humans and especially epidemiology, but we also look 5 to see if there are plausible biologic mechanisms that 6 can link what we see in the human data, in terms of 7 exposure to risk of disease, so we do look at biological 8 mechanisms as well. 9 Q (By Mr. Williams) Much of epidemiologic observational 10 research in cancer focuses on determining the 11 associations between an exposure and an outcome, true or 12 not true? 13 A Yes, that's true. 14 Q The mere existence of an association does not itself 15 prove a cause and effect relationship between the 16 exposure and the disease, right? 17 A The existence of an association is typically part of the 18 scientific data we would use in order to determine if 19 it's a cause and effect, and there could be some-- some 20 associations that would be so difficult to explain 21 otherwise, that you would understand that that has to be 22 a cause, but typically in the epidemiology of cancer, we 23 are looking at both the results in human, human 24 population studies, epidemiology studies, but we also 25 look at plausible biologic mechanisms.</p>
<p style="text-align: right;">Page 107</p> <p>1 themselves a news service, and they wanted me to talk 2 about new results. 3 I added-- I did add to try to avoid other 4 carcinogens, and I specifically mentioned air pollution 5 and asbestos as some things that affect many different 6 cancers, but I was primarily tasked to talk about 7 nutrition, physical activity, and diet, and especially 8 since that was a new report. 9 That's why this article is focused on that. 10 Q Did you identify talc use as an actual or probable 11 carcinogen of any kind of cancer in this article? 12 A This was not focused on any particular risk factor, so I 13 was talking about very generic environmental causes of 14 cancer, and I can see that I did mention asbestos as an 15 example, but I did not list all of the cancer-causing 16 chemicals that can be encountered. 17 Q In terms of your day-to-day research activities, those 18 are in the field of epidemiology, correct? 19 A Epidemiology and clinical trials. 20 Some people consider that clinical research, and 21 some consider it epidemiology, but I'm an epidemiologist 22 and an internist. 23 Q When it comes to assessing cause, epidemiology, your 24 field, is only one part of the causation analysis; is 25 that true?</p>	<p style="text-align: right;">Page 109</p> <p>1 Q Association is not synonymous with causation, is it, 2 ma'am? 3 A Association, correct, it's not exactly the same as 4 causation. 5 Q As you read the epidemiologic literature as part of your 6 work in this matter, you considered the Bradford Hill 7 aspects of causal inference, right? 8 A That's correct. 9 Q The continuous research project, for which you serve as a 10 panel member, also uses the Bradford Hill criteria as the 11 basis for its systematic review analyses, true? 12 A The World Cancer Research Fund has a modified version of 13 Bradford Hill. 14 Most groups that are looking at these types of 15 variables, and are looking at developing public 16 recommendations, will use some kind of modification of 17 Bradford-Hill-like criteria, so the World Cancer Research 18 Fund has developed criteria that are very different in 19 some way from other epidemiology studies, and 20 particularly because they're focused on nutrition, and 21 nutrition is a variable different from other types of 22 exposures in terms of developing them. 23 They also have further developed those criteria for 24 survivorship, so it's not exactly a Bradford Hill 25 analysis.</p>

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<p style="text-align: right;">Page 110</p> <p>1 Q The Bradford Hill criteria are the basis for the</p> <p>2 Continuous Update Project systematic review analyses and</p> <p>3 the criteria for judging the evidence, true or not true?</p> <p>4 MS. PARFITT: Objection; form, asked</p> <p>5 and answered.</p> <p>6 THE WITNESS: I would say Bradford</p> <p>7 Hill criteria were considered in developing the</p> <p>8 guidelines for the systematic review interpretation.</p> <p>9 (Exhibit No. 10 marked</p> <p>10 for identification.)</p> <p>11</p> <p>12 Q (By Mr. Williams) Let me have you look at what we've</p> <p>13 marked as Exhibit No. 10.</p> <p>14 Exhibit No. 10 is a multi-page document from the</p> <p>15 World Cancer Research Fund entitled, "Judging the</p> <p>16 evidence," and dated 2018.</p> <p>17 Do you recognize this document?</p> <p>18 A Yes, I do.</p> <p>19 Q This document was published at a time when you were</p> <p>20 serving as a panelist for the World Cancer Research Fund?</p> <p>21 A It was developed before then, but it was published again</p> <p>22 at that time, yes.</p> <p>23 Q Let me have you look at Page 4.</p> <p>24 Page 4 sets forth how to cite the third expert</p> <p>25 report ; does it not?</p>	<p style="text-align: right;">Page 112</p> <p>1 That was my question.</p> <p>2 MS. PARFITT: Mr. Williams, if I could</p> <p>3 just say, she is a doctor, if we could refer to her as</p> <p>4 "Doctor."</p> <p>5 MR. WILLIAMS: I'm sorry. Pardon me.</p> <p>6 Q (By Mr. Williams) Dr. McTiernan, excuse me, is that last</p> <p>7 sentence of the second paragraph on Page 5 accurate or</p> <p>8 not?</p> <p>9 MS. PARFITT: Thank you.</p> <p>10 Objection.</p> <p>11 THE WITNESS: When I said "basis," I</p> <p>12 would say it's the beginning because it was revised quite</p> <p>13 a bit.</p> <p>14 I will add to that.</p> <p>15 There are things in this document, in this</p> <p>16 evidence-- "Judging the evidence" document that go much</p> <p>17 beyond what Bradford Hill aspects considered and are much</p> <p>18 more specific to these types of variables.</p> <p>19 Q (By Mr. Williams) Let me have you turn to-- let's take a</p> <p>20 look back at the exhibit that we marked as Exhibit No. 5.</p> <p>21 Exhibit No. 5 is the 2018 revised report.</p> <p>22 Do you have that in front of you?</p> <p>23 A Yes.</p> <p>24 Q This document at Page 9 sets forth the methodology for</p> <p>25 the report.</p>
<p style="text-align: right;">Page 111</p> <p>1 A How to cite the whole report, yes.</p> <p>2 Q It was contemplated at the time that this document,</p> <p>3 "Judging the evidence," was published, that it could be</p> <p>4 cited by experts, correct?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: Yes.</p> <p>7 Q (By Mr. Williams) Look at Page 5, if you would.</p> <p>8 A (Witness complies.)</p> <p>9 Q Page 5 under the title, "Introduction," the second full</p> <p>10 paragraph, I will direct you to the last sentence. It</p> <p>11 says, "The Bradford Hill criteria are the basis for the</p> <p>12 Continuous Update Project, CUP, systematic review</p> <p>13 analyses and the criteria for judging evidence."</p> <p>14 Do you see that?</p> <p>15 A Yes, I do.</p> <p>16 Q Is that an accurate statement?</p> <p>17 A I would say it's the beginning because they did change,</p> <p>18 and it spanned quite a bit compared to Bradford Hill.</p> <p>19 Bradford Hill's speech, when he developed it and</p> <p>20 when the result was published in the World Society of</p> <p>21 Medicine, was very basic, did not have the many criteria</p> <p>22 that World Cancer Research Fund uses, and their criteria,</p> <p>23 the way they developed it, beyond Bradford Hill, was</p> <p>24 because of the nutrition-related variables.</p> <p>25 Q Is it an accurate statement or not, ma'am?</p>	<p style="text-align: right;">Page 113</p> <p>1 Do you see that on Page 9?</p> <p>2 A Yes.</p> <p>3 Q And it says, "Through this process," and this is the</p> <p>4 third paragraph on that page. "Through this process the</p> <p>5 CUP ensures that everyone, including policy-makers,</p> <p>6 health professionals, and members of the public, has</p> <p>7 access to the most up-to-date information on how to</p> <p>8 reduce the risk of developing cancer."</p> <p>9 Do you see that?</p> <p>10 A No-- so you are on Page 9?</p> <p>11 Which paragraph?</p> <p>12 Q I'm sorry, Page 4. I misspoke.</p> <p>13 MS. PARFITT: Thank you.</p> <p>14 Q (By Mr. Williams) Pardon me, ma'am-- Doctor.</p> <p>15 Page 4, third paragraph, under "Our Continuous</p> <p>16 Update Project."</p> <p>17 Do you see that?</p> <p>18 A Yes.</p> <p>19 Q The whole purpose of the continuous update process is to</p> <p>20 try to ensure that members of the public have access to</p> <p>21 the most up-to-date information on how to reduce the risk</p> <p>22 of developing cancer, correct?</p> <p>23 MS. PARFITT: Objection; misstates the</p> <p>24 document.</p> <p>25 THE WITNESS: If you are looking at</p>

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<p style="text-align: right;">Page 114</p> <p>1 that sentence, you would also have to put it in context</p> <p>2 of what this report is.</p> <p>3 It's related to diet, nutrition, physical activity</p> <p>4 and cancer.</p> <p>5 It is not all potential causes of cancer that an</p> <p>6 individual could modify in order to reduce risk.</p> <p>7 We are talking only about diet, nutrition, and</p> <p>8 physical activity.</p> <p>9 Q (By Mr. Williams) Let's look at Page No. 9 of this</p> <p>10 exhibit.</p> <p>11 At the end of the first paragraph, under the</p> <p>12 heading, "Methodology," it says, halfway down that</p> <p>13 paragraph, "The literature search was restricted to</p> <p>14 Medline and included only randomized controlled trials,</p> <p>15 cohort and case-control studies. Due to their</p> <p>16 methodological limitations, case-control studies were not</p> <p>17 analyzed in the Ovarian Cancer SLR 2013."</p> <p>18 Do you see that?</p> <p>19 A Yes.</p> <p>20 Q And "SLR" refers to "systematic literature review"?</p> <p>21 A Yes, it does.</p> <p>22 Q When you were considering the literature in your work for</p> <p>23 the World Cancer Research Fund to determine what causes</p> <p>24 cancer, it is accurate that your panel did not look at</p> <p>25 any case-control studies?</p>	<p style="text-align: right;">Page 116</p> <p>1 and those can have case-control studies in them.</p> <p>2 It's just that when they do their meta-analyses,</p> <p>3 which is actually looking at data from the various</p> <p>4 studies, they make the choice for nutrition variables to</p> <p>5 focus on cohort studies for some cancers and some</p> <p>6 exposures.</p> <p>7 As I mentioned, arsenic, there was some other</p> <p>8 exposures, like very hot teas that were studied in</p> <p>9 case-control studies, so that's not a complete sentence--</p> <p>10 statement for all of the projects.</p> <p>11 MR. WILLIAMS: I move to strike that</p> <p>12 as nonresponsive.</p> <p>13 Q (By Mr. Williams) My question to you is this:</p> <p>14 The last sentence under "Methodology" on Page 9 of</p> <p>15 this exhibit, Exhibit No. 5, says that "Due to their</p> <p>16 methodological limitations, case-control studies were not</p> <p>17 analyzed in the Ovarian Cancer SLR 2013."</p> <p>18 That's what it says, right?</p> <p>19 A And I was explaining what it means.</p> <p>20 Q You would agree with me that each study design, cohort</p> <p>21 study, case-control study, other types of studies, has</p> <p>22 its advantages and limitations, correct?</p> <p>23 A That's true.</p> <p>24 Q And you would agree that the hierarchy of epidemiological</p> <p>25 evidence places cohort studies above case-control</p>
<p style="text-align: right;">Page 115</p> <p>1 A That's not true for the entire work that we did.</p> <p>2 For some of the cancers and some of the exposures we</p> <p>3 did include case-control studies; for example, arsenic</p> <p>4 and some other carcinogens.</p> <p>5 When I mentioned that the Bradford Hill aspects were</p> <p>6 extended for this analysis, it is particularly because of</p> <p>7 nutrition variables.</p> <p>8 Nutrition variables are very difficult to ascertain</p> <p>9 for exposure because as opposed to the use of talcum</p> <p>10 powder products, which might be used once or twice a day,</p> <p>11 nutrition variables are occurring sometimes 50 to 100</p> <p>12 times a day.</p> <p>13 The amount that people eat, what they're eating, how</p> <p>14 often they're eating, the variables are so difficult to</p> <p>15 collect, that the results from case-control studies are a</p> <p>16 concern to some investigators.</p> <p>17 Many epidemiologists disagree with this choice of</p> <p>18 what World Cancer Research Fund decided to do.</p> <p>19 When it says-- however, I should also mention when</p> <p>20 it says, "analyzed," that's analyzed for the</p> <p>21 meta-analysis.</p> <p>22 The World Cancer Research Fund, when they do the</p> <p>23 systematic reviews, also looks for pooled analyses and</p> <p>24 meta-analyses, and they present them in the SLR, and</p> <p>25 reports will have information from those other reports,</p>	<p style="text-align: right;">Page 117</p> <p>1 studies?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: I would say the</p> <p>4 hierarchy of epidemiology evidence depends entirely on</p> <p>5 the question under review.</p> <p>6 If you have an exposure, which is very difficult to</p> <p>7 measure and which can change over time or which you are</p> <p>8 trying to determine lifetime exposure, then often it's</p> <p>9 more-- it's easier to do that in a case-control study.</p> <p>10 The case-control studies that were reviewed for the</p> <p>11 talcum powder product used and ovarian cancer risk</p> <p>12 primarily used interview questionnaires, so an</p> <p>13 interviewer spending time, sometimes several hours with a</p> <p>14 patient in control, to determine lifetime exposures.</p> <p>15 The cohort studies, however, typically, and</p> <p>16 especially the three cohort studies that were included in</p> <p>17 this review and that have been published on ovarian</p> <p>18 cancer and talcum powder products, those studies were</p> <p>19 designed to look at multiple diseases.</p> <p>20 Nurses' Health Study was started to--</p> <p>21 Q (By Mr. Williams) Ma'am, I am going to have to cut you</p> <p>22 off because-- look, when I ask you questions, I need you</p> <p>23 to answer the question that I've asked. Otherwise, you</p> <p>24 could just talk for a half an hour, so if you would,</p> <p>25 please, Doctor, just focus on the question that I'm</p>

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<p style="text-align: right;">Page 118</p> <p>1 asking you.</p> <p>2 The question that I'm asking you is:</p> <p>3 As a matter of epidemiological practice in your line</p> <p>4 of work, is it true or not true that case-- excuse me,</p> <p>5 that cohort studies are placed higher in the hierarchy</p> <p>6 than case-control studies?</p> <p>7 If the answer is that's not true, please just say</p> <p>8 it's not true.</p> <p>9 MS. PARFITT: Objection to form; asked</p> <p>10 and answered.</p> <p>11 THE WITNESS: I think-- yeah, I did</p> <p>12 try to answer that before. I will try to do it better</p> <p>13 this time.</p> <p>14 For one thing, I am not sure what hierarchy you are</p> <p>15 referring to, but what I'm saying is that depending on</p> <p>16 the question, one type of study could be preferable to</p> <p>17 another, but in general all of the studies provide</p> <p>18 information, and we look at the totality of evidence.</p> <p>19 Q (By Mr. Williams) So it is your view that there is no</p> <p>20 generally accepted hierarchy of epidemiological evidence?</p> <p>21 MS. PARFITT: Objection; form,</p> <p>22 misstates her testimony.</p> <p>23 THE WITNESS: I think it depends</p> <p>24 entirely on what the question is.</p> <p>25 Q (By Mr. Williams) Let's look at Exhibit No. 10, which is</p>	<p style="text-align: right;">Page 120</p> <p>1 question to you now is:</p> <p>2 Is it your testimony that there is in fact no</p> <p>3 generally accepted hierarchy of epidemiological evidence</p> <p>4 that places cohort studies above case-control studies?</p> <p>5 MS. PARFITT: Objection.</p> <p>6 THE WITNESS: And I would again say it</p> <p>7 depends entirely on the question, the scientific</p> <p>8 question.</p> <p>9 Q (By Mr. Williams) Here this references that cohort</p> <p>10 studies are likely to be the main source of evidence</p> <p>11 owing to the long latent period for cancer and owing to</p> <p>12 their prospective design.</p> <p>13 Those are the two concepts that it mentions in that</p> <p>14 sentence, correct?</p> <p>15 A That's what that mentions, yes.</p> <p>16 Q And the latent period for cancer refers to the fact that</p> <p>17 exposure to a substance can sometimes take some time</p> <p>18 before cancer is developed, right?</p> <p>19 A That's correct.</p> <p>20 Q That's the latency period?</p> <p>21 A Yes.</p> <p>22 Q And the idea of a prospective cohort study is that people</p> <p>23 are asked about their-- what they do and put on and in</p> <p>24 their bodies right now when they are healthy, and then</p> <p>25 they are followed along, correct?</p>
<p style="text-align: right;">Page 119</p> <p>1 the "Judging the evidence" document from 2018 from the</p> <p>2 World Cancer Research Fund, and I will direct your</p> <p>3 attention to the seventh page.</p> <p>4 At the bottom of Page 7 of this exhibit, Exhibit</p> <p>5 No. 10, it has a section that says, "Study design," that</p> <p>6 says, "Each study design has its advantages and</p> <p>7 limitations. The hierarchy of epidemiological evidence</p> <p>8 places cohort studies above case-control studies, with</p> <p>9 ecological studies and case reports at the bottom.</p> <p>10 "There are merits in considering a number of</p> <p>11 different study designs. Cohort studies are likely to be</p> <p>12 the main source of evidence owing to the long latent</p> <p>13 period for cancer to develop and also to their</p> <p>14 prospective design"--</p> <p>15 A I'm sorry, can you say where you're reading from?</p> <p>16 MS. PARFITT: 7. He's right here.</p> <p>17 THE WITNESS: Okay.</p> <p>18 Q (By Mr. Williams) And I've read through that heading,</p> <p>19 "Study design," through to the last sentence that says,</p> <p>20 "However, in some circumstances case-control studies and</p> <p>21 ecological studies may also make a useful contribution to</p> <p>22 the evidence," and it refers to Section 7.</p> <p>23 Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Now, we are going to go to Section 7 in a minute, but my</p>	<p style="text-align: right;">Page 121</p> <p>1 A That's correct.</p> <p>2 Q Okay. And retrospective case-control studies are</p> <p>3 backwards-looking where people are asked questions after</p> <p>4 they have contracted a disease and they are asked to</p> <p>5 recall what they put on and in their bodies, true?</p> <p>6 A So that is typical.</p> <p>7 Cohort studies, by the way, could also ask</p> <p>8 retrospectively what somebody had done over their</p> <p>9 lifetime.</p> <p>10 In this particular case, with talcum powder</p> <p>11 products, they did, but I have seen many studies do that.</p> <p>12 They can do a lifetime exposure, and then if-- the</p> <p>13 better cohort studies focused on certain-- depending on</p> <p>14 the question, they update their data so that then you</p> <p>15 could have a lifetime exposure variable from a cohort</p> <p>16 study.</p> <p>17 For the-- in terms of long latent period for cancer,</p> <p>18 case-control studies, if they're asking about lifetime</p> <p>19 exposure and collecting that information, that would not</p> <p>20 be an issue or a problem for case-control studies.</p> <p>21 Q Let me have you turn to Section No. 7, which is on Page</p> <p>22 21.</p> <p>23 That's the section that's referred to at the end of</p> <p>24 the page we were just looking at, the study design</p> <p>25 section referring to Section 7, so I want to go there.</p>

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<p>1 Do you have Page 21 in front of you?</p> <p>2 A Yeah.</p> <p>3 Q In the left-hand column under Section 7, "Evidence</p> <p>4 collated for the Continuous Update Project," at the very</p> <p>5 bottom, it has the sentence that says, "The first stage</p> <p>6 of the SLRs was a comprehensive search using a</p> <p>7 standardized search strategy for the scientific</p> <p>8 literature for randomized trials and cohort studies</p> <p>9 published since 2006 using Medline. Because case-control</p> <p>10 studies are particularly prone to recall (and other)</p> <p>11 bias, they were not routinely reviewed"--</p> <p>12 A Where are you again? Okay. Sorry.</p> <p>13 MS. PARFITT: Just give her a moment,</p> <p>14 Mr. Williams, to catch up.</p> <p>15 Q (By Mr. Williams) Do you see where I am?</p> <p>16 A Yes.</p> <p>17 Q In the right-hand column of Page 21 it says, "Because</p> <p>18 case-control studies are particularly prone to recall</p> <p>19 (and other) bias, they were not routinely reviewed.</p> <p>20 "However, if there were no or very few RCTs or</p> <p>21 cohort studies, they were included."</p> <p>22 Do you see that?</p> <p>23 A Yes.</p> <p>24 Q In the case of talc and ovarian cancer, as of 2018, is it</p> <p>25 accurate to say that there are five cohort studies that</p>	<p>1 showed that there was no statistically significant</p> <p>2 relationship between talc use and ovarian cancer,</p> <p>3 correct?</p> <p>4 MS. PARFITT: Objection; form.</p> <p>5 THE WITNESS: One of those studies did</p> <p>6 show a statistically significant association with use of</p> <p>7 talcum powder products and risk of serous ovarian cancer,</p> <p>8 and that was the Gertig study, but I also did an analysis</p> <p>9 showing there was insufficient number of cases in all</p> <p>10 three of those studies in order to find a statistically</p> <p>11 significant result.</p> <p>12 The driver of statistical significance is the number</p> <p>13 of cases in a study, regardless of whether it's a cohort</p> <p>14 study or case-control study.</p> <p>15 Q (By Mr. Williams) We will get to the number of cases in</p> <p>16 a moment, but with respect to the Gertig study, you are</p> <p>17 aware and came across in your review, because you</p> <p>18 referenced them in your report, that that Gertig study</p> <p>19 was updated in 2008 and 2010 under the name "Gates,"</p> <p>20 correct?</p> <p>21 MS. PARFITT: Objection; form.</p> <p>22 THE WITNESS: 2008 I would not call an</p> <p>23 update.</p> <p>24 It only included 200 cases from the Nurses' Health</p> <p>25 Study. It also included other cases from the New England</p>
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<p>1 you have had the benefit of reviewing?</p> <p>2 A That is not correct.</p> <p>3 In the three cohort studies, one of which had three</p> <p>4 publications with different numbers of cases in them--</p> <p>5 there are three cohort studies.</p> <p>6 Q So if we count the study that has three different cohort</p> <p>7 studies within it, and then add the other two cohort</p> <p>8 studies, we would get to five; would we not?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 THE WITNESS: I repeat, the three</p> <p>11 cohort studies, just that one of them has three</p> <p>12 publications.</p> <p>13 Q (By Mr. Williams) And do you consider three cohort</p> <p>14 studies, one of which had three separate sets of data, to</p> <p>15 be insufficient to do an analysis of whether talc causes</p> <p>16 ovarian cancer?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: I would consider those</p> <p>19 three-- what I would do is look at the individual studies</p> <p>20 of those three studies. I would look at how the data</p> <p>21 were collected and whether you can get the information</p> <p>22 that you want to look at your question, before deciding</p> <p>23 that they were sufficient on their own.</p> <p>24 Q (By Mr. Williams) Every single cohort study that you</p> <p>25 looked at in this case, for your work in this litigation,</p>	<p>1 case-control study, so when you look at just the Nurses'</p> <p>2 Health Study, part of it was only 200 cases, and it is</p> <p>3 very difficult to determine which cases those were.</p> <p>4 The second update wasn't an update, but at that time</p> <p>5 they ended up looking at a different variable, a</p> <p>6 different comparison.</p> <p>7 The first study compared no use, never-users, to</p> <p>8 users of different categories.</p> <p>9 The second-- the third study compared-- combined</p> <p>10 never-users with use of less than once a week, so you</p> <p>11 have a very different comparison, so I think that was--</p> <p>12 that was concerning.</p> <p>13 It's not clear it's a real update-- the data aren't</p> <p>14 really there.</p> <p>15 That third study also didn't focus just on talc.</p> <p>16 Talc was just one of the variables in the study.</p> <p>17 Q (By Mr. Williams) To the extent that the 2010 study by</p> <p>18 Gates, that update-- first of all, the 2010 update wasn't</p> <p>19 an update.</p> <p>20 You just said that yourself, correct, Doctor?</p> <p>21 MS. PARFITT: Objection.</p> <p>22 THE WITNESS: It was an update of</p> <p>23 cases.</p> <p>24 It is not clear it was an update of the data.</p> <p>25 Q (By Mr. Williams) True or not true, the 2010 Gates</p>

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<p style="text-align: right;">Page 126</p> <p>1 update did not show a statistically significant increased</p> <p>2 risk of serous invasive ovarian cancer?</p> <p>3 MS. PARFITT: Objection.</p> <p>4 THE WITNESS: It did not show a</p> <p>5 statistically significant association, correct.</p> <p>6 Q (By Mr. Williams) Can you identify any cohort study that</p> <p>7 concluded that there was a statistically significant</p> <p>8 overall association between talc and ovarian cancer?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 THE WITNESS: So you are talking about</p> <p>11 for talc and any type of epithelial ovarian cancer?</p> <p>12 Q (By Mr. Williams) Any statistically significant overall</p> <p>13 association between talc and ovarian cancer.</p> <p>14 A That's correct, I didn't have sufficient sample size to</p> <p>15 do it.</p> <p>16 Q The answer to my question is that you cannot identify any</p> <p>17 cohort study concluding that there was a statistically</p> <p>18 significant overall association between talc and ovarian</p> <p>19 cancer, correct?</p> <p>20 MS. PARFITT: Objection to form; asked</p> <p>21 and answered.</p> <p>22 Q (By Mr. Williams) You may answer, Doctor.</p> <p>23 A So my answer is the same, that statistical significance</p> <p>24 is not seen because the sample size is too small.</p> <p>25 Q Is there any other reason why statistical significance</p>	<p style="text-align: right;">Page 128</p> <p>1 12:30? What's your pleasure?</p> <p>2 MS. PARFITT: Can we go off the</p> <p>3 record?</p> <p>4 MR. WILLIAMS: Let's go off the</p> <p>5 record.</p> <p>6 VIDEOGRAPHER: Going off record, the</p> <p>7 time is 12:07 p.m.</p> <p>8 (Recess 12:07 to 12:0 p.m.)</p> <p>9</p> <p>10 VIDEOGRAPHER: We are back on the</p> <p>11 record. The time is 12:09 p.m.</p> <p>12 Q (By Mr. Williams) Dr. McTiernan, would you agree that if</p> <p>13 you had only looked at the cohort studies in this case,</p> <p>14 like it is suggested is appropriate in the World Cancer</p> <p>15 Research Fund "Judging the evidence" document, Exhibit</p> <p>16 No. 10, that you would not have been able to opine that</p> <p>17 talcum powder causes ovarian cancer?</p> <p>18 MS. PARFITT: Objection; form.</p> <p>19 THE WITNESS: First I want to respond</p> <p>20 by characterizing the World Cancer Research Fund</p> <p>21 document, that they're referring to nutrition variables,</p> <p>22 so that is why they consider case-control studies to be a</p> <p>23 much lower hierarchy than cohort studies.</p> <p>24 In terms of what was seen in the cohort studies, we</p> <p>25 did see, with the Nurses' Health Study, elevated risk of</p>
<p style="text-align: right;">Page 127</p> <p>1 was not seen besides the sample size being too small?</p> <p>2 A Sample size is one of the major drivers.</p> <p>3 The other thing is there is a lot of variability</p> <p>4 around the point estimate, the relative risk.</p> <p>5 When you see a sample size that's that small, that's</p> <p>6 the major thing you start thinking about.</p> <p>7 Q Other than sample size and variability, is there any</p> <p>8 other factor that you believe makes the cohort studies</p> <p>9 unreliable?</p> <p>10 A I don't think I used the word "unreliable." I used the</p> <p>11 word "not statistically significant."</p> <p>12 MS. PARFITT: Objection.</p> <p>13 Q (By Mr. Williams) Other than sample size and</p> <p>14 variability, is there anything else that bears upon</p> <p>15 statistical significance that is important?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 You are referring to the collective group of cohort</p> <p>18 studies?</p> <p>19 THE WITNESS: The statistical</p> <p>20 significance-- you are not talking about the effects.</p> <p>21 You are talking about statistical significance. Those</p> <p>22 are the things that would drive it, in my opinion.</p> <p>23 MR. WILLIAMS: Counsel, I am going to</p> <p>24 go to a different topic.</p> <p>25 Do you want to take lunch now? Do you want to go</p>	<p style="text-align: right;">Page 129</p> <p>1 serous cancer.</p> <p>2 We also saw in the two cohort studies elevated risk</p> <p>3 that was not statistically significant, and I-- my</p> <p>4 opinion is that's because the sample size was small.</p> <p>5 In answer, two of the three cohort studies did show</p> <p>6 elevated risk of ovarian cancer, but they were not</p> <p>7 statistically significant, with the exception to the</p> <p>8 serous subtype in the Nurses' Health Study.</p> <p>9 Q (By Mr. Williams) Have you completed your answer?</p> <p>10 A Yes.</p> <p>11 Q The only type of cancer for which there was a</p> <p>12 statistically significant finding in one of the studies</p> <p>13 related to serous invasive ovarian cancer, correct?</p> <p>14 A Only one type showing statistical significance around</p> <p>15 that relative risk, yes.</p> <p>16 Q And that was the Gertig 2000 study?</p> <p>17 A Yes.</p> <p>18 The--</p> <p>19 Q Ma'am, you have answered my question.</p> <p>20 Was the Gertig 2000 study the only study where there</p> <p>21 was a statistically significant finding that serous</p> <p>22 invasive ovarian cancer was associated with talc use?</p> <p>23 MS. PARFITT: Objection; form.</p> <p>24 THE WITNESS: For the cohort studies,</p> <p>25 yes, that's correct.</p>

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<p style="text-align: right;">Page 130</p> <p>1 Q (By Mr. Williams) I take it you and I disagree as to</p> <p>2 whether or not the Gates 2010 update showed that that</p> <p>3 previously seen statistically significant increased risk</p> <p>4 for serous invasive cancer went away?</p> <p>5 You think it did not go away. I represented to you</p> <p>6 that the study says that it did go away, right?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 THE WITNESS: My issue with them is</p> <p>9 not-- is that different comparisons were made.</p> <p>10 The first one looked at never-use versus ever-use--</p> <p>11 Q (By Mr. Williams) You have already explained that,</p> <p>12 ma'am--</p> <p>13 MS. PARFITT: Please allow her to</p> <p>14 complete.</p> <p>15 THE WITNESS: I am just referring to</p> <p>16 my answer.</p> <p>17 The second study, the 2010 Gates study, was then</p> <p>18 comparing never-user plus less than once a week use</p> <p>19 versus greater use, so it's a different comparison.</p> <p>20 That's going to dampen, going to lower the relative risk</p> <p>21 by putting some of the users in with the nonusers.</p> <p>22 Q (By Mr. Williams) The Gates 2010 study did not show a</p> <p>23 statistically significant increased risk for serous</p> <p>24 invasive ovarian cancer, true or not true?</p> <p>25 MS. PARFITT: Objection; form, asked</p>	<p style="text-align: right;">Page 132</p> <p>1 World Cancer Research report or my report?</p> <p>2 Q (By Mr. Williams) I am referring to--</p> <p>3 A For the talcum powder products--</p> <p>4 Q I'll restate the question.</p> <p>5 For purposes of preparing your report, Exhibit No. 2</p> <p>6 for this deposition, which is the report you prepared for</p> <p>7 this litigation-- do you have that in mind?</p> <p>8 A Yes.</p> <p>9 Q It is true that you relied heavily on Exhibit No. 10, the</p> <p>10 "Judging the evidence" document, in preparing your</p> <p>11 report, which is Exhibit No. 2?</p> <p>12 MS. PARFITT: Objection; form.</p> <p>13 THE WITNESS: I didn't rely heavily.</p> <p>14 I cited it as some of the methods of reviewing</p> <p>15 meta-analyses. I used some of the methods that I used</p> <p>16 for that as well as what was used for the government</p> <p>17 physical activity guidelines, but I did not use this</p> <p>18 entirely.</p> <p>19 In terms of determining causality, I used-- I went</p> <p>20 back to the original Bradford Hill aspects, listed</p> <p>21 aspects, to determine causality. I did not use the</p> <p>22 guidelines for the CUP analysis in determining whether</p> <p>23 the association that's seen between talcum powder</p> <p>24 products and risk of ovarian cancer meets criteria for</p> <p>25 causal.</p>
<p style="text-align: right;">Page 131</p> <p>1 and answered.</p> <p>2 THE WITNESS: It showed a six percent</p> <p>3 increase in risk that was not statistically significant,</p> <p>4 and it's not comparing nonusers to users. It's comparing</p> <p>5 nonusers plus less-than-once-a-week users to more-often</p> <p>6 users.</p> <p>7 Q (By Mr. Williams) Let me ask you to look, Doctor, at</p> <p>8 Exhibit No. 10--</p> <p>9 A Which one?</p> <p>10 Q Exhibit No. 10, the "Judging the risk" document from</p> <p>11 2018-- excuse me, "Judging the evidence."</p> <p>12 I misspoke.</p> <p>13 First, I haven't done this yet, but if you look at</p> <p>14 Page 30, the acknowledgments section, it lists you as a</p> <p>15 panel member for this review, correct?</p> <p>16 A Yes.</p> <p>17 Q It is true that you relied very heavily on this document,</p> <p>18 that is Exhibit No. 10, in drafting your report for this</p> <p>19 case?</p> <p>20 MS. PARFITT: Objection; misstates</p> <p>21 testimony.</p> <p>22 THE WITNESS: I did not draft this</p> <p>23 report.</p> <p>24 Is that what you mean?</p> <p>25 The World Cancer-- so you are talking about the</p>	<p style="text-align: right;">Page 133</p> <p>1 Q (By Mr. Williams) Let me be very specific about what I</p> <p>2 mean.</p> <p>3 When you were typing up Exhibit No. 2, your report</p> <p>4 for this case, you literally had this exhibit, Exhibit</p> <p>5 No. 10, next to you as you typed?</p> <p>6 MS. PARFITT: Objection.</p> <p>7 Q (By Mr. Williams) True or not true?</p> <p>8 MS. PARFITT: Objection; form.</p> <p>9 THE WITNESS: It's not true.</p> <p>10 Q (By Mr. Williams) Is it your testimony that you prepared</p> <p>11 your report without any reference at all to any part of</p> <p>12 Exhibit No. 10?</p> <p>13 A I did reference it. It's one of the references here.</p> <p>14 Q Show me that, if you would.</p> <p>15 A I think-- I used-- I included the website.</p> <p>16 Q You included the website for the 2014 report on Page 5 of</p> <p>17 your report, but if you did refer to this document,</p> <p>18 Exhibit No. 10, in your references or anywhere else,</p> <p>19 please let me know where that is.</p> <p>20 A So I don't see it if I did.</p> <p>21 Q Have you completed your answer?</p> <p>22 A What was the question again?</p> <p>23 Q I was asking you to point out for me--</p> <p>24 A Did I refer to it or did I reference it?</p> <p>25 I may not have referenced it.</p>

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<p style="text-align: right;">Page 134</p> <p>1 I thought I had.</p> <p>2 Yeah, I just have the website here.</p> <p>3 Q Let me refer you to your report in this case, Exhibit</p> <p>4 No. 2, and ask you to turn to Page 10.</p> <p>5 You have a heading that says, "The science of</p> <p>6 epidemiology" at Page 10.</p> <p>7 Do you see that?</p> <p>8 A Yes.</p> <p>9 Q And with the first paragraph there, starting about a</p> <p>10 third of the way into the paragraph, you write,</p> <p>11 "Epidemiological research describes and seeks to explain</p> <p>12 the distribution of health and disease within human</p> <p>13 populations."</p> <p>14 Did I read that correctly?</p> <p>15 A Yes.</p> <p>16 Q And skipping a sentence, you write, "This type of</p> <p>17 investigation is known as observational. By relating</p> <p>18 differences in circumstances and behavior to differences</p> <p>19 in the incidence of disease, associations are identified</p> <p>20 that may or may not be causal."</p> <p>21 Is that what it says?</p> <p>22 A Yes.</p> <p>23 Q And then the first sentence of the next paragraph says,</p> <p>24 "In epidemiological studies, an exposure is a factor or</p> <p>25 condition that may or may not influence the risk of</p>	<p style="text-align: right;">Page 136</p> <p>1 Is it accurate to say that the sentences that are</p> <p>2 set forth under that heading, "Epidemiological evidence,"</p> <p>3 are identical to sentences found in your report on Page</p> <p>4 10, with one exception, that there is a sentence that</p> <p>5 appears in your report that does not appear on Page 6 of</p> <p>6 Exhibit No. 10?</p> <p>7 MS. PARFITT: Object to the form of</p> <p>8 the question.</p> <p>9 THE WITNESS: I think you are talking</p> <p>10 about the sentences up here.</p> <p>11 Q (By Mr. Williams) I am actually talking about the three</p> <p>12 sentences that I read from Page 10 of your report, two</p> <p>13 sentences from the first paragraph, and one sentence, the</p> <p>14 first sentence from the second paragraph.</p> <p>15 Those three sentences are identical, word for word,</p> <p>16 to the sentences that appear on Page 6 of Exhibit No. 10?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 Q (By Mr. Williams) Correct?</p> <p>19 A Yes.</p> <p>20 Q Now, just so we're clear, did you provide the people who</p> <p>21 wrote the text of the World Cancer Research Fund a copy</p> <p>22 of your expert report in this case when this document,</p> <p>23 "Judging the evidence" was prepared?</p> <p>24 A No, they did not get a copy of this.</p> <p>25 Nobody has seen it, other than Ms. Parfitt and her</p>
<p style="text-align: right;">Page 135</p> <p>1 disease," right?</p> <p>2 A Yes.</p> <p>3 Q Throughout your report you included a lot of citations to</p> <p>4 works that you relied upon, correct?</p> <p>5 A Yes.</p> <p>6 Q Your reference section includes, I think we said, 127</p> <p>7 citations, right?</p> <p>8 A Yes.</p> <p>9 Q You did not provide a citation for any of the sentences</p> <p>10 that we just read, right?</p> <p>11 A That is not here, no.</p> <p>12 Q And by that I mean there is no reference to a footnote,</p> <p>13 there is no reference to any of the 127 items in the back</p> <p>14 of your report, correct?</p> <p>15 A That's correct.</p> <p>16 Q Now, turn back to the "Judging the evidence" document,</p> <p>17 which we marked as Exhibit No. 10, and I will ask you to</p> <p>18 turn to Page 6 under the heading, "Epidemiological</p> <p>19 evidence."</p> <p>20 Right underneath that heading the "Judging the</p> <p>21 evidence" document from the World Cancer Research Fund</p> <p>22 says, and I'm quoting, "Epidemiological research</p> <p>23 describes and seeks to explain the distribution of health</p> <p>24 and disease within human populations," and I will stop</p> <p>25 there.</p>	<p style="text-align: right;">Page 137</p> <p>1 colleagues.</p> <p>2 Q So to this day there is nobody from the WCRF who has seen</p> <p>3 your expert report in this litigation, correct?</p> <p>4 A That's correct.</p> <p>5 Q So the way this work was, you had in front of you Exhibit</p> <p>6 No. 10, and you prepared-- took out sentences from the</p> <p>7 WCRF document and included them word for word in your</p> <p>8 report, correct?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 THE WITNESS: I can't recall where I</p> <p>11 took this.</p> <p>12 I have many different documents where I have</p> <p>13 information about what epidemiology is.</p> <p>14 If I took it from here, I should have cited it, but</p> <p>15 I can't recall where exact sentences came from.</p> <p>16 Q (By Mr. Williams) Wherever you took it from--</p> <p>17 A I should have cited it.</p> <p>18 Q Whether it was the "Judging the evidence" document or</p> <p>19 someplace else, you didn't cite it?</p> <p>20 A I should have cited it, you're right.</p> <p>21 Q Now, we went through your expert report and the</p> <p>22 Continuous Update Project's "Judging the evidence"</p> <p>23 document, Exhibit No. 10, and we put the text side by</p> <p>24 side for various sections for ease of reference, and I'm</p> <p>25 going to pass those out to you, and we'll mark it as</p>

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<p>1 Exhibit No. 11.</p> <p>2 We will give it to Counsel.</p> <p>3 (Exhibit No. 11 marked</p> <p>4 for identification.)</p> <p>5</p> <p>6 Q (By Mr. Williams) Now, what we set forth here are a</p> <p>7 total of 13 different places where the language from the</p> <p>8 "Judging the evidence" report was used word for word,</p> <p>9 with some exceptions, in your report.</p> <p>10 Do you see that?</p> <p>11 I am not asking you to agree or disagree, but let me</p> <p>12 ask you to see that there are 13 different examples where</p> <p>13 the language is either word for word or roughly word for</p> <p>14 word used in your report, taking language that also</p> <p>15 appears in the "Judging the evidence" report.</p> <p>16 Do you see that?</p> <p>17 Take your time to look through there.</p> <p>18 MS. PARFITT: Objection to form.</p> <p>19 THE WITNESS: I can see that some of</p> <p>20 these are very common epidemiologic terms.</p> <p>21 Q (By Mr. Williams) Let's look for a little-- why don't</p> <p>22 you put that to one side for a moment and let me just ask</p> <p>23 you some other questions, and then we'll take lunch.</p> <p>24 I want to discuss a few places where it appears that</p> <p>25 you copied from the "Judging the evidence" document and</p>	<p>1 "The combination of data from multiple studies</p> <p>2 creates a larger data set and increased statistical</p> <p>3 power."</p> <p>4 Did I read that right from Exhibit No. 10?</p> <p>5 A Yes.</p> <p>6 Q Now, when you prepared your litigation report, you copied</p> <p>7 a lot of the language verbatim into your litigation</p> <p>8 report but made a few changes.</p> <p>9 Have you noticed those?</p> <p>10 MS. PARFITT: Objection to that form.</p> <p>11 Q (By Mr. Williams) Let me refer you to Exhibit No. 2,</p> <p>12 Page 22 of your report.</p> <p>13 Exhibit No. 2, Page 22.</p> <p>14 I would ask you to keep Exhibit No. 2, Page 22 open</p> <p>15 and keep Page 11 of Exhibit No. 10 open, and put them</p> <p>16 side by side.</p> <p>17 Referring you now to Page 22 of Exhibit No. 2, the</p> <p>18 first full paragraph on that page says, "Pooled analysis</p> <p>19 is a type of meta-analysis where original</p> <p>20 individual-level data from various published and/or</p> <p>21 unpublished epidemiological studies are combined and</p> <p>22 re-analyzed."</p> <p>23 Did I read that correctly from your report?</p> <p>24 A Yes.</p> <p>25 Q Now, when you wrote your report, the only difference</p>
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<p>1 made some changes.</p> <p>2 MS. PARFITT: And I will object to the</p> <p>3 form of that.</p> <p>4 Please continue.</p> <p>5 Q (By Mr. Williams) In describing what a pooled analysis</p> <p>6 is in the Continuous Update Project report, and I will</p> <p>7 refer you to Exhibit No. 10 at Page 11, in the right-hand</p> <p>8 column--</p> <p>9 MS. PARFITT: Just give us a moment--</p> <p>10 THE WITNESS: Exhibit No. 10?</p> <p>11 Q (By Mr. Williams) Right, Exhibit No. 10 at Page 11 on</p> <p>12 the right-hand column.</p> <p>13 There is a heading that says-- there's a paragraph</p> <p>14 that begins, "Pooled analysis," last paragraph on the</p> <p>15 page.</p> <p>16 Do you see that?</p> <p>17 A Mm-hm.</p> <p>18 Q Is that a "yes"?</p> <p>19 A Yes.</p> <p>20 Q In Exhibit No. 10, which is the "Judging the evidence"</p> <p>21 document, it says, "Pooled analysis is a type of</p> <p>22 meta-analysis in which original individual-level data</p> <p>23 from various published epidemiological studies of a</p> <p>24 similar type - usually prospective cohort studies - are</p> <p>25 combined and re-analyzed.</p>	<p>1 between the language that's set forth in Exhibit No. 10,</p> <p>2 in that first sentence, the only language that is added</p> <p>3 is "and/or unpublished."</p> <p>4 Do you see that?</p> <p>5 A Yes.</p> <p>6 Q So while the Exhibit No. 10, the "Judging the evidence"</p> <p>7 document that was put out by the World Cancer Research</p> <p>8 Fund, when they described a pooled analysis, they didn't</p> <p>9 say anything about unpublished studies, true?</p> <p>10 A So again--</p> <p>11 Q Pardon me?</p> <p>12 I am asking you to look at Exhibit No. 10, Page 11.</p> <p>13 A Right.</p> <p>14 Q Right-hand column.</p> <p>15 A Right.</p> <p>16 Q That sentence does not say anything about "and/or</p> <p>17 unpublished," does it?</p> <p>18 A Right-- yes, it doesn't.</p> <p>19 Q And then in that sentence, if you go back to Page 22 of</p> <p>20 your report, after you added "and/or unpublished</p> <p>21 epidemiological studies," you took out some information,</p> <p>22 did you not, some words?</p> <p>23 A What are you referring to that I took out?</p> <p>24 Q Well, the words that you took out were, dash, "Usually</p> <p>25 prospective cohort studies," dash, right?</p>

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<p>1 Actually, you also took out the words "of a similar 2 type," so let me restate the question. 3 In your report you took out the words "of a similar 4 type - usually prospective cohort studies"-- and I will 5 put a closed quote there. 6 You took those words out, right? 7 A So, again, I can't remember every place-- because when I 8 write projects, I do take sections from things that I've 9 previously been involved with, since I'm considered on 10 this panel and it's considered as something I'm involved 11 with. I should have cited it, but I would be citing 12 something that I'm part of. 13 This-- it's not true that pooled analyses is only 14 prospective cohort studies, and it is not even true that 15 it's usually. 16 Many pooled analyses of case-control studies-- there 17 are many pulled analyses of clinical trials, so when 18 they're saying, "usually prospective cohort studies," 19 they're referring for what they usually-- for their data 20 or WCRF data, are usually prospective for the nutrition 21 variables, so that's what they specified there. 22 Q The words "of a similar type - usually prospective cohort 23 studies," do not appear in your report. 24 Can we agree on that? 25 MS. PARFITT: Objection; form.</p>	<p>1 studies, but you changed that language for your 2 litigation report to include "unpublished studies," 3 right? 4 MS. PARFITT: Objection; form. 5 THE WITNESS: The Continuous Update 6 Project did make a decision to use only published data 7 because it did not have the personal power to get 8 unpublished. 9 It is typical in pooled analysis and sometimes in 10 meta-analyses to look for additional data if it's known 11 to exist, even if it's not published. 12 This is true for clinical trial pooled analyses, 13 case-control pooled analyses, and cohort pulled analyses. 14 It is not surprising at all that-- it was not 15 unusual to see that in the Terry pooled analysis there 16 were three studies that were previously unpublished that 17 were added to the published data for that pooled 18 analysis. 19 I've seen this for one of the pooled analyses we 20 relied on for the physical activity guidelines committee, 21 and so it's a common method. 22 As long as you use the same criteria to determine if 23 that study has valid data, then it's quite customary to 24 include it in a pooled analysis. 25 Q (By Mr. Williams) The only pooled analysis that you</p>
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<p>1 THE WITNESS: It wouldn't be relevant 2 because I am talking generally about pooled analysis, and 3 it's individual data from-- it could be any type of 4 studies. 5 I mentioned it could be clinical trials. There are 6 many pooled analyses of clinical trials. 7 It could be cohort studies, it could be case-control 8 studies. 9 And sometimes the cohorts and case-control studies 10 will be combined together where the cohort studies are 11 nested case-control studies, so it could be a combination 12 of two different types. 13 MR. WILLIAMS: I move to strike that 14 as nonresponsive. 15 Q (By Mr. Williams) Doctor, my question is this: 16 The words "of a similar type - usually prospective 17 cohort studies," those words do not appear in your 18 report. 19 Can we agree on that? 20 MS. PARFITT: Objection; form, asked 21 and answered. 22 THE WITNESS: I agree they don't 23 appear in my report. 24 Q (By Mr. Williams) So the Continuous Update Project 25 document stated that you should only pool published</p>	<p>1 looked at for this litigation was Terry 2013, correct? 2 MS. PARFITT: Objection; form. 3 THE WITNESS: It's the only one that 4 characterizes a pooled analysis. 5 There were some of the case-control studies that 6 added together more than one study. 7 The second study of the Nurses' Health Study was a 8 pooled analysis of Nurses' Health cases and New England 9 case-control studies, so that was a pooled study that 10 involved just two sets of studies. 11 Q (By Mr. Williams) The only pooled analysis that you 12 cited in your paragraph on Page 22, referencing Item 39, 13 which I'll represent to you is the Terry 2013 study, the 14 only pooled analysis that you studied in your report on 15 Page 22 is the Terry study, correct? 16 A I cited that singly because it was large enough. 17 My point is that it's large enough to be able to 18 look at some of these associations. 19 Q And that Terry 2013 study pooled eight case-control 20 studies, correct? 21 A That's correct. 22 It's a pooling project that has been done for many 23 other variables as well. 24 Q Doctor, we will be here all day and it will go late into 25 the night.</p>

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<p style="text-align: right;">Page 146</p> <p>1 I would ask you to answer just the question that I</p> <p>2 ask.</p> <p>3 The question that I'm asking you now is:</p> <p>4 The Terry 2013 pooled eight case-control studies,</p> <p>5 correct?</p> <p>6 That's all I'm asking.</p> <p>7 A That's correct.</p> <p>8 Q You deviated from the Continuous Update Project's</p> <p>9 definition of a pooled analysis, which is on Page 11 of</p> <p>10 Exhibit No. 10, in order to accommodate a study that you</p> <p>11 found helpful for the plaintiffs in this case, correct?</p> <p>12 MS. PARFITT: Objection; form,</p> <p>13 completely misstates her testimony and her opinions.</p> <p>14 You may answer.</p> <p>15 THE WITNESS: The Continuous Update</p> <p>16 Project definition was discussing studies related to</p> <p>17 nutrition, and the Continuous Update Project decided to</p> <p>18 only look at cohort studies for some of the relationships</p> <p>19 they were addressing.</p> <p>20 I believe this is why this sentence was written in</p> <p>21 that way, but it is not true that pooled analyses are</p> <p>22 usually prospective cohorts.</p> <p>23 If you look at pooled analyses in general, many of</p> <p>24 them are clinical trials, they are done in the treatment</p> <p>25 area, many of them are case-control studies, and many can</p>	<p style="text-align: right;">Page 148</p> <p>1 A That's correct.</p> <p>2 Q My question to you then is:</p> <p>3 Can you point us to any reference material anywhere</p> <p>4 that uses word for word the formulation for pooled</p> <p>5 analyses that you have set forth in the first two</p> <p>6 sentences of that paragraph?</p> <p>7 A So I think you're asking about pooled analyses that</p> <p>8 include studies that are not published; is that correct?</p> <p>9 Q I am asking the question that I asked.</p> <p>10 I will restate it one more time.</p> <p>11 Can you point us--</p> <p>12 MR. WILLIAMS: Counsel, I would as</p> <p>13 that you not point to anything.</p> <p>14 MS. PARFITT: I am just trying-- there</p> <p>15 is a monitor, for the Ladies and Gentlemen of the Jury,</p> <p>16 in front of the doctor, and I am just reminding her to</p> <p>17 look at the monitor, but you can--</p> <p>18 MR. WILLIAMS: I think that's</p> <p>19 inappropriate.</p> <p>20 Q (By Mr. Williams) But, Doctor, here is my question</p> <p>21 again:</p> <p>22 The first full paragraph on Page 22 describes pooled</p> <p>23 analyses. I'm referring you to the first two sentences</p> <p>24 there-- are you with me so far?</p> <p>25 A Yes.</p>
<p style="text-align: right;">Page 147</p> <p>1 be cohort studies.</p> <p>2 Q (By Mr. Williams) Let me ask my question this way:</p> <p>3 Doctor, could you point us to some learned treatise,</p> <p>4 study, summary of studies that uses the formulation for</p> <p>5 pooled analysis word for word that is set forth on Page</p> <p>6 22 of your report; that is, could you point us to some</p> <p>7 source that says that pooled analyses is a type of</p> <p>8 meta-analysis that includes published and unpublished</p> <p>9 studies and that simultaneously does not reference</p> <p>10 prospective cohort studies?</p> <p>11 Is there something that you can point us to that</p> <p>12 uses the formulation for pooled analysis that you've set</p> <p>13 forth?</p> <p>14 MS. PARFITT: Objection; form.</p> <p>15 THE WITNESS: I'm a little bit</p> <p>16 confused by the question, but--</p> <p>17 Q (By Mr. Williams) Let me stop you there because if</p> <p>18 you're confused, it does me no good.</p> <p>19 I will restate it.</p> <p>20 Your paragraph here on Page 22 has one, and only</p> <p>21 one, citation, and that's to 39, the Terry 2013 study,</p> <p>22 correct?</p> <p>23 A That's correct.</p> <p>24 Q There are no other citations of any sort in that</p> <p>25 paragraph, correct?</p>	<p style="text-align: right;">Page 149</p> <p>1 Q Looking at those sentences word for word, and I mean</p> <p>2 every word in both of those two sentences-- are you still</p> <p>3 with me?</p> <p>4 A Yes.</p> <p>5 Q Okay. Looking at those two sentences, can you point us</p> <p>6 to any reference material that you have reviewed anywhere</p> <p>7 that describes pooled analyses using the words, and I</p> <p>8 mean word for word, as you set it forth here in the first</p> <p>9 two sentences of Paragraph No. 22?</p> <p>10 MS. PARFITT: Objection; form.</p> <p>11 Q (By Mr. Williams) You either can or you can't.</p> <p>12 The answer is yes, the answer is no.</p> <p>13 I just need to know--</p> <p>14 A Since I wrote that sentence, I am not sure where else it</p> <p>15 would be.</p> <p>16 If I was going to cite-- no, I can't.</p> <p>17 I wrote that sentence.</p> <p>18 Q Okay. What we do know is that the description of pooled</p> <p>19 analysis in Exhibit No. 10, which is the World Cancer</p> <p>20 Research Fund "Judging the evidence" document that has,</p> <p>21 on Page 2, a description of how one is to cite to it,</p> <p>22 what we do know is that that document describes pooled</p> <p>23 analysis as including published epidemiological studies</p> <p>24 of a similar type, usually prospective cohort studies,</p> <p>25 right?</p>

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<p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: And I disagree with that</p> <p>3 characterization of pooled studies.</p> <p>4 MR. WILLIAMS: Why don't we take a</p> <p>5 lunch break.</p> <p>6 VIDEOGRAPHER: Going off the record.</p> <p>7 The time is 12:40 p.m.</p> <p>8 (Lunch recess 12:40 to 1:21 p.m.)</p> <p>9</p> <p>10 VIDEOGRAPHER: We are going on the</p> <p>11 record at 1:21 p.m.</p> <p>12 This is the start of Media Unit 3.</p> <p>13 Q (By Mr. Williams) Good afternoon, Doctor.</p> <p>14 This morning there have been several occasions when</p> <p>15 I've used the word "ma'am," and I really apologize, and I</p> <p>16 mean no disrespect. I am going to try to use the word</p> <p>17 "Doctor."</p> <p>18 It's just how I was raised, and I apologize, but I</p> <p>19 do understand that that can be disrespectful. I don't</p> <p>20 mean that at all.</p> <p>21 A No problem. Thanks.</p> <p>22 Q In response to several of my questions earlier today</p> <p>23 about the various World Cancer Research Fund and CUP</p> <p>24 reports that we have marked as Exhibits 4, 5, and 10,</p> <p>25 there have been several times when you have made</p>	<p>1 A That's correct.</p> <p>2 Q Now, early menarche or age of first-- a woman first</p> <p>3 having her period is also listed as something that may be</p> <p>4 seen as a cause of ovarian cancer in this paragraph,</p> <p>5 right?</p> <p>6 A Yes.</p> <p>7 Q Can we agree that early menarche, not bearing children,</p> <p>8 and late natural menopause are not related to nutrition,</p> <p>9 physical activity, or diet?</p> <p>10 A This paragraph is related to background, and it's talking</p> <p>11 about menstrual cycles during a woman's lifetime. That's</p> <p>12 why it's talking about all of those variables related to</p> <p>13 early menarche, late menopause.</p> <p>14 I am not sure why whoever wrote this focused in on</p> <p>15 that, on a woman's menstrual cycle.</p> <p>16 They did not do a full systematic review of the risk</p> <p>17 factors for ovarian cancer.</p> <p>18 I can see from what was written here--</p> <p>19 Q Whether you consider it to be a full systematic review or</p> <p>20 not, my question is:</p> <p>21 Early menarche, not bearing children, and late</p> <p>22 natural menopause are not, in and of themselves, related</p> <p>23 to nutrition, physical activity, or diet, right?</p> <p>24 A And the whole report was not-- was to discuss and</p> <p>25 interpret and summarize meta-analyses-- for all of the</p>
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<p>1 reference to your view that the focus of those reports</p> <p>2 was on nutrition, physical activity, and diet.</p> <p>3 Do you recall that that has happened occasionally?</p> <p>4 A Yes.</p> <p>5 Q If you could take out Exhibit No. 5, which is the 2018</p> <p>6 report of the WCRF-- and I will ask you to turn to Page</p> <p>7 8.</p> <p>8 Section 4, "Other established causes," Page 8-- do</p> <p>9 you have that in front of you, ma'am?</p> <p>10 A Yes.</p> <p>11 Q Section No. 4 is entitled, "Other established causes,"</p> <p>12 and let me-- while you have that in front of you, let me</p> <p>13 ask:</p> <p>14 Not bearing children is listed as something that</p> <p>15 this report says may be a cause of ovarian cancer,</p> <p>16 correct?</p> <p>17 A It says, "May be seen as protective against ovarian</p> <p>18 cancer," yes.</p> <p>19 Q Well, actually, it says-- I will just read it. The</p> <p>20 second sentence says, "Not bearing children increases the</p> <p>21 risk of and may be seen as a cause of ovarian cancer,"</p> <p>22 and it goes on to say, "The reverse also applies: Bearing</p> <p>23 children reduces the risk of and may be seen as</p> <p>24 protective against ovarian cancer."</p> <p>25 Do you see that?</p>	<p>1 cancers, different writers put in paragraphs about some</p> <p>2 general factors about the cancers, and there was no</p> <p>3 effort to do a systematic review, so these are not causal</p> <p>4 analyses that were listed here.</p> <p>5 I don't know why these particular ones were picked.</p> <p>6 They're missing some.</p> <p>7 They're missing endometriosis, for example, as well</p> <p>8 as talcum powder.</p> <p>9 They are missing public inflammatory disease, so it</p> <p>10 is not a full review.</p> <p>11 For some reason they picked just some</p> <p>12 menstrual-related variables to mention here.</p> <p>13 Q Now, again, you said, "they."</p> <p>14 Once this draft was prepared, you have testified</p> <p>15 this morning that the panel, on which you are a member,</p> <p>16 reviews and makes judgments based upon the draft that is</p> <p>17 received, right?</p> <p>18 A In-- the 2014 draft.</p> <p>19 To my knowledge it was not changed.</p> <p>20 We did not see another update to review prior to the</p> <p>21 2018 publication of everything together.</p> <p>22 This was a 2014 document and it was on the website</p> <p>23 in 2014.</p> <p>24 Q I want the record to be clear the document that I'm</p> <p>25 referring you to right now, the Exhibit No. 5 to your</p>

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<p style="text-align: right;">Page 154</p> <p>1 deposition, is the revised document dated 2018.</p> <p>2 We have that clear, right?</p> <p>3 A Yes, but it also says, "2014" on the label for ovarian</p> <p>4 cancer.</p> <p>5 Q It does, but it also says that it was revised and</p> <p>6 published in 2018, right?</p> <p>7 I don't want to argue with you, but it does say that</p> <p>8 was revised and published in 2018, true?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 Q (By Mr. Williams) Go ahead.</p> <p>11 A To my knowledge, the content was not changed.</p> <p>12 I am not sure exactly why it was called "Revised,"</p> <p>13 except that everything was put together and the</p> <p>14 recommendations were added to this obviously, the overall</p> <p>15 cancer recommendations, but to my knowledge the</p> <p>16 meta-analysis for the nutrition variables and all were</p> <p>17 not updated.</p> <p>18 Clearly this review of other potential causes was</p> <p>19 not updated, so in my mind it's the 2014 report.</p> <p>20 Q Now, let me focus you back on the lack of connection</p> <p>21 between early menarche, nutrition, and physical activity,</p> <p>22 and diet, okay?</p> <p>23 Whether you believe this was a complete analysis or</p> <p>24 not, the fact is that this report, which is marked as</p> <p>25 Exhibit No. 5, does discuss menarche, not bearing</p>	<p style="text-align: right;">Page 156</p> <p>1 talc or not using talc is a modifiable behavior.</p> <p>2 If you would, with your answer, as you describe how</p> <p>3 you think these are unrelated and different contexts, how</p> <p>4 is it that those contexts are different for purposes of</p> <p>5 the analysis that you have done in this case?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 THE WITNESS: So this is an issue</p> <p>8 about measuring the exposure.</p> <p>9 If you ask about talcum powder product use, you</p> <p>10 typically are asking about something that is used once or</p> <p>11 twice a day.</p> <p>12 Somebody may just use one product. Perhaps they use</p> <p>13 more, but they're not going to be using as many variables</p> <p>14 as in nutrition.</p> <p>15 Assessing nutrition is extremely difficult.</p> <p>16 Assessing nutrition for a lifetime is even more</p> <p>17 difficult, and so this is why for case-control studies</p> <p>18 nutrition analyses are very difficult to do if you are</p> <p>19 trying to ask somebody retrospectively, "What did you eat</p> <p>20 when you were in your 20s?"</p> <p>21 You can ask somebody whether they used some products</p> <p>22 in their 20s and expect their recall to be much better</p> <p>23 than what they ate 30, 40 years ago because we are always</p> <p>24 talking about decades of latency between exposure and</p> <p>25 development of ovarian cancer.</p>
<p style="text-align: right;">Page 155</p> <p>1 children, and late menopause, right?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: It does include those,</p> <p>4 and it's missing other risk factors for ovarian cancer.</p> <p>5 Q (By Mr. Williams) So the statement "Epidemiological</p> <p>6 principles" in this report, and those that we looked at</p> <p>7 in other exhibits, Exhibit 4 and Exhibit No. 10, do apply</p> <p>8 to your analysis of talc and ovarian cancer in this case,</p> <p>9 right?</p> <p>10 They do apply to things that are not limited to</p> <p>11 nutrition, physical activity, and diet, correct?</p> <p>12 MS. PARFITT: Objection; form,</p> <p>13 misstates her testimony.</p> <p>14 THE WITNESS: I am curious, what is</p> <p>15 the statement "epidemiologic principles"? Are you</p> <p>16 referring to something in this ovarian cancer report?</p> <p>17 Q (By Mr. Williams) Let me ask it this way:</p> <p>18 Why is it that nutrition is a totally separate</p> <p>19 context than talc?</p> <p>20 Explain, if you would, to the Court, who is the</p> <p>21 person who is going to review this-- describe to the</p> <p>22 Court how nutrition is a separate context than talc, with</p> <p>23 particular attention, Dr. McTiernan, to the notion that</p> <p>24 nutrition, what someone eats and takes into their body,</p> <p>25 is a modifiable behavior in the same manner that using</p>	<p style="text-align: right;">Page 157</p> <p>1 Case-control studies can be done for numbers of</p> <p>2 exposures, and they can be-- characterize exposure very</p> <p>3 well, but nutrition is a special case.</p> <p>4 Some epidemiologists still do do case-control</p> <p>5 studies of nutrition, but some, like-- because there are</p> <p>6 so many cohort studies available in nutrition, some</p> <p>7 epidemiologists prefer to look at that, especially when</p> <p>8 you're looking at a cancer that has a long latency</p> <p>9 period, and so you are looking for long interval between</p> <p>10 when the exposure happened and when the cancer occurred.</p> <p>11 Q (By Mr. Williams) Have you completed your answer?</p> <p>12 A Pardon me?</p> <p>13 Q Have you completed your answer?</p> <p>14 A Yes.</p> <p>15 Q Anything else that you want to add about the differences</p> <p>16 between the context of nutritional and dietary concerns</p> <p>17 versus the use of talcum powder?</p> <p>18 A I think that's it.</p> <p>19 Q Okay. Why is it harder to remember-- strike that.</p> <p>20 Why would it be harder for me or anyone else to</p> <p>21 remember the types of foods I ate in my teens or my 20s</p> <p>22 as compared to whether I used talcum powder during a</p> <p>23 particular time in my life?</p> <p>24 A When you ask people about nutrition, you don't just ask</p> <p>25 one question, "How often did you eat beef?"</p>

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<p style="text-align: right;">Page 158</p> <p>1 You are asking them for multiple types of foods, how</p> <p>2 often they ate it, how much they ate it.</p> <p>3 We often use food frequency questionnaires that can</p> <p>4 be 12 pages long, each with about 20 to 30 items on them,</p> <p>5 and to ask about-- somebody to recall that much</p> <p>6 information retrospectively is more difficult than to ask</p> <p>7 them to recall using one item.</p> <p>8 Medications, we can often get information</p> <p>9 retrospectively, like hormone therapy. We can ask that</p> <p>10 about that case-control studies and help the woman</p> <p>11 remember, but because it was one pill that the woman had</p> <p>12 to take per day, it is an easier thing to remember than</p> <p>13 50 to 100 variables that you have to remember with a</p> <p>14 dietary recall.</p> <p>15 Q Do you think it would be easier for a woman to recall</p> <p>16 that she used talcum powder during her 20s than it would</p> <p>17 be for her to recall that she ate red meat in her 20s?</p> <p>18 A I think it would be easier in the sense that people are</p> <p>19 going to remember something that intimate, how often--</p> <p>20 whether they used it or not, and we don't ask people just</p> <p>21 one question, "Did you eat red meat?"</p> <p>22 We ask them hundreds of questions of what they ate.</p> <p>23 Q Do you ask hundreds of questions about red meat?</p> <p>24 A We don't usually do studies with just red meat.</p> <p>25 We do studies where we are asking about entire</p>	<p style="text-align: right;">Page 160</p> <p>1 THE WITNESS: I think if you wanted to</p> <p>2 see if-- if you had just that one question, what somebody</p> <p>3 ate, what meat they ate, a case-control study would be</p> <p>4 just fine, you could ask somebody what they ate in the</p> <p>5 past if it's just one variable.</p> <p>6 If you're asking them to remember 50 to 100</p> <p>7 variables, it's much more difficult.</p> <p>8 Q (By Mr. Williams) Have we exhausted all of the reasons</p> <p>9 why you believe that the context of this Exhibit No. 5,</p> <p>10 this CUP update, is totally different, as you said, than</p> <p>11 the context of the talc-related studies?</p> <p>12 Is there anything else that you need to add to your</p> <p>13 answer?</p> <p>14 A I can't think of anything.</p> <p>15 Q Pardon me?</p> <p>16 A I can't think of anything, no.</p> <p>17 Q Let me change topics slightly.</p> <p>18 As an epidemiologist, you are familiar with a type</p> <p>19 of bias called confounding, right?</p> <p>20 A Yes.</p> <p>21 Q Confounding is a type of bias that occurs when a third</p> <p>22 variable interferes with a true relationship between an</p> <p>23 exposure and an outcome, right?</p> <p>24 A Yes.</p> <p>25 Q Those are the words you used in your report, right?</p>
<p style="text-align: right;">Page 159</p> <p>1 dietary pattern.</p> <p>2 I don't know of any study that asks just that one</p> <p>3 question.</p> <p>4 Q These studies that relate to talcum powder refer often to</p> <p>5 multiple products and substances that a person puts on or</p> <p>6 in her body; do they not?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 THE WITNESS: From the questionnaires</p> <p>9 that I've looked at from these studies, when they're</p> <p>10 available, they are much simpler questions, and often</p> <p>11 they were assisted with remembering by in-person</p> <p>12 interview or telephone interview with someone that is</p> <p>13 helping them remember what they did during that period of</p> <p>14 life.</p> <p>15 That can be used for a simple question, simple</p> <p>16 exposure.</p> <p>17 For diet, it's much more difficult.</p> <p>18 Q (By Mr. Williams) I understand that some questionnaires</p> <p>19 may be longer than others, but with respect to an</p> <p>20 individual question, that is whether someone ate red meat</p> <p>21 in their 20s or someone used talcum powder in their 20s,</p> <p>22 do you really see those questions as-- one of those</p> <p>23 questions as more complicated than the other, taken</p> <p>24 individually?</p> <p>25 MS. PARFITT: Objection to the form.</p>	<p style="text-align: right;">Page 161</p> <p>1 A Mm-hm.</p> <p>2 Q "Yes"?</p> <p>3 A Yes.</p> <p>4 Q A confounder is one that is related both to the risk</p> <p>5 disease and to the exposure, correct?</p> <p>6 A That's correct.</p> <p>7 Q The classic example that you use in your report is people</p> <p>8 who carry matches are more likely to develop lung cancer</p> <p>9 than individuals who do not carry matches, right?</p> <p>10 A Correct.</p> <p>11 Q In that example, the cause and effect relationship, the</p> <p>12 true one, is not between matches and lung cancer, but</p> <p>13 rather between smoking and lung cancer, correct?</p> <p>14 A Correct.</p> <p>15 Q Correlation does not equal causation, correct?</p> <p>16 The two do not equate?</p> <p>17 A I wouldn't go from one to the other, so-- this just means</p> <p>18 that there's another variable explaining an association</p> <p>19 in the first example, which is confounding.</p> <p>20 Q Do you believe that correlation and causation mean one in</p> <p>21 the same thing when you are dealing with epidemiological</p> <p>22 studies?</p> <p>23 A I don't usually use the word "correlation."</p> <p>24 Association is one thing we look at when we're</p> <p>25 trying to determine if there's a causal relationship.</p>

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<p style="text-align: right;">Page 162</p> <p>1 Q What I'm juxtaposing is correlation on the one hand and</p> <p>2 causation on the other.</p> <p>3 Do you have my question in mind?</p> <p>4 A I see it here, yes.</p> <p>5 Q Do you believe that correlation is identical to</p> <p>6 causation?</p> <p>7 MS. PARFITT: Objection; asked and</p> <p>8 answered.</p> <p>9 THE WITNESS: I think by "correlation"</p> <p>10 you mean "association."</p> <p>11 Q (By Mr. Williams) I mean a correlation between two</p> <p>12 variables.</p> <p>13 MS. PARFITT: Objection; form.</p> <p>14 THE WITNESS: Yeah, I think</p> <p>15 correlation is one way that two variables can be related,</p> <p>16 and causation is a much more complicated analysis.</p> <p>17 Q (By Mr. Williams) Same question with respect to</p> <p>18 association.</p> <p>19 Does association equate with causation?</p> <p>20 A I would say the same thing, association is part of causal</p> <p>21 analysis.</p> <p>22 Q So in a paper studying the association between</p> <p>23 match-carrying, for example, and lung cancer, you would</p> <p>24 need to adjust for smoking before making any conclusions</p> <p>25 about the risk estimates, true?</p>	<p style="text-align: right;">Page 164</p> <p>1 that Counsel gave you and produced to us on January 25th,</p> <p>2 a few days ago.</p> <p>3 Do you see that on the list?</p> <p>4 A No.</p> <p>5 Which list is this?</p> <p>6 MS. PARFITT: If I may, Counsel, I</p> <p>7 will hand her Exhibit No. 3.</p> <p>8 THE WITNESS: Oh, Kesmodel?</p> <p>9 MR. WILLIAMS: Yes.</p> <p>10 THE WITNESS: Yes.</p> <p>11 Q (By Mr. Williams) So Kesmodel is one of the studies that</p> <p>12 was provided to us, Defense counsel, by Plaintiffs'</p> <p>13 counsel on January 25th, correct?</p> <p>14 A Is that the date?</p> <p>15 Q That's the date we received it. I will represent that to</p> <p>16 you.</p> <p>17 A Okay.</p> <p>18 Q Have you read that study?</p> <p>19 A Yes.</p> <p>20 Q We'll mark that as Exhibit No. 12.</p> <p>21 (Exhibit No. 12 marked</p> <p>22 for identification.)</p> <p>23 ////</p> <p>24 Q (By Mr. Williams) I will just refer you quickly to the</p> <p>25 abstract on the first page of Exhibit No. 12, the</p>
<p style="text-align: right;">Page 163</p> <p>1 A I think usually we would want to look at it the other</p> <p>2 way.</p> <p>3 If you're looking at-- you wouldn't adjust for it</p> <p>4 necessarily. You might make sure to be aware that it's</p> <p>5 part of the causal-- part of the pathway.</p> <p>6 If you totally adjust for it, then it might make the</p> <p>7 relationship disappear, so perhaps it's not the best</p> <p>8 explanatory variable to use-- the best example, but the</p> <p>9 premise is that there can be a second variable that can</p> <p>10 be interfering with the relationship, which is why we</p> <p>11 adjust for things that can potentially be related to both</p> <p>12 the exposure and to the disease.</p> <p>13 Q And the second variable in the example that I used and</p> <p>14 that you used in your report was that variable of whether</p> <p>15 someone smokes?</p> <p>16 A Yes.</p> <p>17 Q In addition to the variable of their having matches</p> <p>18 often, right?</p> <p>19 A Yes.</p> <p>20 Q And one of the studies that you gave us this morning is a</p> <p>21 study written by Ulrik, U-L-R-I-K S. Kesmodel,</p> <p>22 K-E-S-M-O-D-E-L.</p> <p>23 Do you remember giving that one to us this morning?</p> <p>24 A Is this in the list?</p> <p>25 Q It was in the-- I'm sorry, it was identified on the list</p>	<p style="text-align: right;">Page 165</p> <p>1 Kesmodel study.</p> <p>2 About three-quarters of the way down, the abstract</p> <p>3 paragraph, it says, "Misclassification of confounders is</p> <p>4 an issue that needs special attention by researchers, as</p> <p>5 failure to measure accurately one or more strong</p> <p>6 confounders may seriously bias the observed results."</p> <p>7 Did I read that correctly from the abstract?</p> <p>8 A Yes.</p> <p>9 Q In the case of talcum powder use and the epidemiological</p> <p>10 studies that you've reviewed, a confounder is one that is</p> <p>11 related to ovarian cancer and perineal talc use, correct?</p> <p>12 A Correct, within that data set, yes.</p> <p>13 Q You agree that high body mass index, or BMI, is an</p> <p>14 established risk factor for ovarian cancer, true?</p> <p>15 A It is a risk factor, yes.</p> <p>16 Q And the WCRF document that we looked at this morning,</p> <p>17 that actually said that body mass index is probably a</p> <p>18 cause of ovarian cancer.</p> <p>19 Do you remember that this morning?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 THE WITNESS: Yes.</p> <p>22 Q (By Mr. Williams) Body mass index is a measure of weight</p> <p>23 as compared to a measurement of height, right?</p> <p>24 A Yes.</p> <p>25 Q Now, the Continuous Update Project, for which you served</p>

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<p style="text-align: right;">Page 166</p> <p>1 as a panel member, has actually concluded that body mass</p> <p>2 index is a probable cause.</p> <p>3 That was Exhibit No.-- I believe it was Exhibit</p> <p>4 No. 5 from this morning.</p> <p>5 Do you remember that?</p> <p>6 A I believe so.</p> <p>7 Yes.</p> <p>8 Q In May 2018, after you were hired by Plaintiffs' lawyers</p> <p>9 in the talc litigation, you wrote an article concluding</p> <p>10 that there was strong evidence that being overweight or</p> <p>11 obese increased the risk for cancers.</p> <p>12 Do you remember that?</p> <p>13 That was Exhibit No. 9 that we talked about this</p> <p>14 morning.</p> <p>15 MS. PARFITT: Sorry, Exhibit No. 9?</p> <p>16 MR. WILLIAMS: Yes.</p> <p>17 THE WITNESS: The article--</p> <p>18 Q (By Mr. Williams) The article that had your picture on</p> <p>19 it this morning, Exhibit No. 9 that we showed you--</p> <p>20 A Oh, press--</p> <p>21 Q It's 9.</p> <p>22 On the second page in the first paragraph it says</p> <p>23 that the latest report found strong evidence that being</p> <p>24 overweight or obese increased the risk for a number of</p> <p>25 things, and one of the things that is mentioned is cancer</p>	<p style="text-align: right;">Page 168</p> <p>1 A Yes.</p> <p>2 Q Let me direct you to Page 250, which should be the second</p> <p>3 page of the copy that was handed to you, the left-hand</p> <p>4 column, first paragraph, last sentence-- hold on. I am</p> <p>5 trying to find the citation.</p> <p>6 Under the results section on that page, Page 250, do</p> <p>7 you see that first paragraph?</p> <p>8 A Yes.</p> <p>9 Q The last sentence there says, "Talc use was associated</p> <p>10 with higher body mass index and inversely associated with</p> <p>11 current cigarette smoking."</p> <p>12 Do you see that?</p> <p>13 A Yes.</p> <p>14 Q Talc use, this study found, was associated with higher</p> <p>15 body mass index, true?</p> <p>16 That's what it says?</p> <p>17 A It doesn't give us any statistics on it, but if you look</p> <p>18 at the table, you can see a slight association, yes.</p> <p>19 Q Well, Table No. 1 does give us some information, correct?</p> <p>20 MS. PARFITT: Objection; form.</p> <p>21 THE WITNESS: It doesn't give us any P</p> <p>22 values of how different it was. It doesn't give us</p> <p>23 percents, but-- yeah.</p> <p>24 Q (By Mr. Williams) Okay. And do you remember that in the</p> <p>25 Cramer 1999 paper, that you rely upon, said that</p>
<p style="text-align: right;">Page 167</p> <p>1 of the ovary, right?</p> <p>2 MS. PARFITT: Objection.</p> <p>3 THE WITNESS: Yes.</p> <p>4 Q (By Mr. Williams) Okay. Talc use is associated with</p> <p>5 higher body mass index, true?</p> <p>6 A I have not investigated that.</p> <p>7 I did not do a review on body mass index and talc</p> <p>8 use.</p> <p>9 Q The observation that talc use is associated with higher</p> <p>10 body mass index is something that was noted in many of</p> <p>11 the studies that you reviewed for purposes of your work,</p> <p>12 right?</p> <p>13 MS. PARFITT: Objection.</p> <p>14 THE WITNESS: I didn't focus on body</p> <p>15 mass index and talc use.</p> <p>16 Q (By Mr. Williams) Let me ask--</p> <p>17 A If you have something to point to, we can look at it.</p> <p>18 Q Let's look at the Gertig 2000 study. We have talked</p> <p>19 about that one today.</p> <p>20 This is going to be Exhibit No. 13.</p> <p>21 (Exhibit No. 13 marked</p> <p>22 for identification.)</p> <p>23 ////</p> <p>24 Q (By Mr. Williams) Do you have the Gertig study in front</p> <p>25 of you, what we have marked as Exhibit No. 13?</p>	<p style="text-align: right;">Page 169</p> <p>1 characteristics, such as body odor or excessive</p> <p>2 perspiration, might predispose to both talc use and</p> <p>3 ovarian cancer, but adjusting for BMI should control for</p> <p>4 those effects.</p> <p>5 Do you remember that?</p> <p>6 MS. PARFITT: Counsel, do you have a</p> <p>7 copy of Cramer 1999 or could we get that?</p> <p>8 MR. WILLIAMS: I am just asking if she</p> <p>9 remembers it now, and if she doesn't--</p> <p>10 THE WITNESS: I don't recall. I would</p> <p>11 have to look at it.</p> <p>12 (Exhibit No. 14 marked</p> <p>13 for identification.)</p> <p>14</p> <p>15 Q (By Mr. Williams) We will mark the Cramer 1999 study as</p> <p>16 Exhibit No. 14.</p> <p>17 I will direct your attention to the page that has in</p> <p>18 the upper right-hand corner "355," the left-hand column,</p> <p>19 second paragraph, the one that begins with, "Regarding</p> <p>20 potential."</p> <p>21 About midway down that paragraph it says,</p> <p>22 "Characteristics such as body odor or excessive</p> <p>23 perspiration might represent subtle constitutional</p> <p>24 features that might predispose to both talc use and</p> <p>25 ovarian cancer, but adjusting for BMI should control for</p>

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<p style="text-align: right;">Page 170</p> <p>1 these effects."</p> <p>2 Do you see that?</p> <p>3 A Yes.</p> <p>4 Q Does it make sense to you, separate and apart from these</p> <p>5 studies that I've shown you, that people who use talc on</p> <p>6 their bodies, including people who use talc in their</p> <p>7 perineal area, do so to absorb sweat and other moisture?</p> <p>8 A I didn't do a survey of why people use this.</p> <p>9 It's not clear that only people who sweat and have</p> <p>10 body odor are choosing to use body powders, so this isn't</p> <p>11 a substantiated sentence.</p> <p>12 I'm not quite clear.</p> <p>13 One statement it has about-- that it may predispose</p> <p>14 to ovarian cancer, I don't know of any literature</p> <p>15 associating body odor or perspiration for risk of or even</p> <p>16 early diagnosis of ovarian cancer, so I'm confused by</p> <p>17 that.</p> <p>18 Q Well, let me ask you to make an assumption then.</p> <p>19 If you make an assumption for me that BMI increases</p> <p>20 the risk for ovarian cancer, and you further make the</p> <p>21 assumption that more talc users have high BMI than</p> <p>22 nontalc users, do you believe that studies looking at</p> <p>23 talc and ovarian cancer should adjust for BMI?</p> <p>24 MS. PARFITT: Objection; form,</p> <p>25 misstates the evidence.</p>	<p style="text-align: right;">Page 172</p> <p>1 multivariate adjusted.</p> <p>2 If it was confounding from any of these variables</p> <p>3 that they adjusted for, you would see very big</p> <p>4 differences or much more marked than you see between</p> <p>5 age-adjusted relative risk and multivariate adjusted</p> <p>6 relative risk.</p> <p>7 Q Now, have you done the analysis to determine whether or</p> <p>8 not BMI was associated with greater talc use or whether</p> <p>9 BMI was associated as a confounder in terms of causing a</p> <p>10 higher odds ratio or risk ratio in the Gertig study?</p> <p>11 A Did I personally do any statistics on these? I didn't</p> <p>12 have the data to do the statistics, but you can see that</p> <p>13 its multivariate relative risk is so similar to</p> <p>14 age-adjusted relative risk. That means that it is not</p> <p>15 confounding in the data.</p> <p>16 Q Did you do that analysis as part of your work?</p> <p>17 MS. PARFITT: Objection; asked and</p> <p>18 answered.</p> <p>19 THE WITNESS: I am doing it right now.</p> <p>20 Q (By Mr. Williams) Did you--</p> <p>21 A Since you pointed it out.</p> <p>22 Q Did you do that analysis as part of your work--</p> <p>23 A When I presented relative risk, I tended to present the</p> <p>24 most adjusted relative risk I could find, I believe.</p> <p>25 That's what I tried to do.</p>
<p style="text-align: right;">Page 171</p> <p>1 THE WITNESS: So we see in one study--</p> <p>2 I did not do a full review of all these studies, and I</p> <p>3 don't believe the data was available in all of them the</p> <p>4 way the Nurses' Health Study presented, which showed body</p> <p>5 mass index-- in all of the studies, and I didn't do a</p> <p>6 survey to look at the association between body mass index</p> <p>7 and talc use.</p> <p>8 I can see from these data in the Gertig study that</p> <p>9 it wasn't a confounder.</p> <p>10 They adjusted for it, but if you look at Table No. 2</p> <p>11 in the Gertig paper, the age-adjusted relative risk is</p> <p>12 very similar to the multivariate adjusted relative risk.</p> <p>13 The multivariate adjusted relative risk included</p> <p>14 body mass index, so this tells me that it's unlikely to</p> <p>15 be any or extremely little confounding when you see such</p> <p>16 a similar result for age-adjusted relative risk as you do</p> <p>17 for multivariate relative risk.</p> <p>18 Q Just so we are clear, you are looking right now at</p> <p>19 Exhibit No. 13, the Gertig study?</p> <p>20 A Sorry. Yes.</p> <p>21 Q Table No. 1 on Page 250, correct?</p> <p>22 A Table 1 and Table 2.</p> <p>23 Table 1 shows the association of BMI versus talc</p> <p>24 use.</p> <p>25 Table 2 shows the relative risk, age adjusted and</p>	<p style="text-align: right;">Page 173</p> <p>1 Q You reviewed three cohort studies in connection with your</p> <p>2 report, according to you, because you count Gates 2008</p> <p>3 and Gates 2010 as part of Gertig, correct? So that</p> <p>4 counts as one, right?</p> <p>5 A I believe those cases-- those two other cases that were</p> <p>6 in the second-- you are talking about the second Nurses'</p> <p>7 Health Study, the Gates 2008? I believe those 2010 were</p> <p>8 in the first one, but they're never quite clear.</p> <p>9 Q Let me start over.</p> <p>10 A Sorry.</p> <p>11 Q I don't want to quibble with you.</p> <p>12 You reviewed Gertig 2000, Houghton 2014, and</p> <p>13 Gonzalez 2016, correct?</p> <p>14 A That's correct.</p> <p>15 Q You also reviewed Gates 2008 and Gates 2010, correct?</p> <p>16 A Correct.</p> <p>17 Q Each one of those studies found no overall statistically</p> <p>18 significant association between perineal talc use and</p> <p>19 ovarian cancer?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 Q (By Mr. Williams) I am not asking about serous invasive,</p> <p>22 as you went to before.</p> <p>23 I am talking about overall perineal task use.</p> <p>24 MS. PARFITT: Objection.</p> <p>25 Q (By Mr. Williams) Correct?</p>

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<p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: And the sample sizes</p> <p>3 were too small to be able to determine statistical</p> <p>4 significance with that level of relative risk.</p> <p>5 Q (By Mr. Williams) It was a consistent finding of those</p> <p>6 cohort studies that there was not a statistically</p> <p>7 significant association between perineal talc use overall</p> <p>8 and ovarian cancer, right?</p> <p>9 MS. PARFITT: Objection; form, asked</p> <p>10 and answered.</p> <p>11 THE WITNESS: The studies were not</p> <p>12 large enough.</p> <p>13 There were not enough cases to determine statistical</p> <p>14 significance or to have a statistically significant</p> <p>15 result.</p> <p>16 Q (By Mr. Williams) Is it your testimony that those</p> <p>17 studies found a statistically significant association</p> <p>18 overall between perineal talc use and ovarian cancer?</p> <p>19 MS. PARFITT: Objection; form.</p> <p>20 Counsel, that has been asked now about three or four</p> <p>21 times.</p> <p>22 I think she has given an answer.</p> <p>23 I know you don't like it, but she has responded.</p> <p>24 Q (By Mr. Williams) Are you saying that those studies</p> <p>25 found a statistically significant association between</p>	<p>1 able to tell us, as you sit here, how many of the</p> <p>2 case-control studies that you read and reviewed and are</p> <p>3 relying on in this case do not adjust for body mass</p> <p>4 index?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: No, I did not count</p> <p>7 that.</p> <p>8 Q (By Mr. Williams) Why not?</p> <p>9 MS. PARFITT: I'm sorry, what was the</p> <p>10 question?</p> <p>11 Q (By Mr. Williams) Why not?</p> <p>12 MS. PARFITT: Objection.</p> <p>13 THE WITNESS: I was tasked to look at</p> <p>14 the overall association.</p> <p>15 I did not look at specific confounders for each of</p> <p>16 the studies.</p> <p>17 Q (By Mr. Williams) So if there were a confounder that</p> <p>18 could impact the answer to the question of whether</p> <p>19 perineal use of talcum powder causes cancer, you didn't</p> <p>20 look at it?</p> <p>21 MS. PARFITT: Objection; form,</p> <p>22 misstates the testimony.</p> <p>23 THE WITNESS: There could be</p> <p>24 confounding variables in any type of research that may or</p> <p>25 may not be available.</p>
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<p>1 perineal talc use and ovarian cancer?</p> <p>2 MS. PARFITT: Objection, form.</p> <p>3 Again, a fifth time asked and answered.</p> <p>4 THE WITNESS: I am saying that they</p> <p>5 did not have a large enough sample size to find a</p> <p>6 statistically significant association.</p> <p>7 Q (By Mr. Williams) Identify for us on the record any</p> <p>8 cohort study that concluded that there was a</p> <p>9 statistically significant overall association between</p> <p>10 talc and ovarian cancer.</p> <p>11 A I can't identify any.</p> <p>12 Q In forming your opinions in this litigation, did you take</p> <p>13 note of the fact that each of those cohort studies</p> <p>14 accounted for body mass index or BMI?</p> <p>15 A I believe I did not go through specific-- I am sure I</p> <p>16 didn't go through specific confounding variables.</p> <p>17 I just noted that they adjusted for potential</p> <p>18 confounders and presented the most adjusted variable.</p> <p>19 Q Your written report does not take note of the fact that</p> <p>20 each of the cohort studies you reviewed accounted for</p> <p>21 body mass index, did it?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: No, I didn't note one</p> <p>24 particular variable for adjustment.</p> <p>25 Q (By Mr. Williams) Without reviewing the studies, are you</p>	<p>1 I noticed in the Gertig study, the data that we just</p> <p>2 talked about, that body mass index was not a confounder,</p> <p>3 so that gives me some-- at least in one data set, that it</p> <p>4 wasn't an issue, nor would the other variables adjusted</p> <p>5 for have been confounders because the multivariate</p> <p>6 relative risk is so similar to the age-adjusted relative</p> <p>7 risk.</p> <p>8 Q (By Mr. Williams) Did the Gertig study conclude what you</p> <p>9 just said?</p> <p>10 A I think I just presented it.</p> <p>11 Q While you are reading, Doctor, I just want to be clear</p> <p>12 with what my question is.</p> <p>13 My question is:</p> <p>14 Did-- strike that.</p> <p>15 Where in the Gertig study did the Gertig study say</p> <p>16 or conclude that BMI is not a confounder for talc use?</p> <p>17 A It's a general epidemiologic principle that if you see</p> <p>18 similar results for the multivariate relative risk that</p> <p>19 you see with just a-- either an unadjusted or in this</p> <p>20 case age-adjusted relative risk, that the confounding</p> <p>21 variables that were adjusted for in the multivariate are</p> <p>22 unlikely to be confounders.</p> <p>23 If they were, the data would look different.</p> <p>24 Q Have you completed your answer?</p> <p>25 A Yes.</p>

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<p style="text-align: right;">Page 178</p> <p>1 Q Did the Gertig study expressly state that BMI is not a</p> <p>2 confounder for talc?</p> <p>3 MS. PARFITT: Objection; asked and</p> <p>4 answered.</p> <p>5 THE WITNESS: I don't see that they</p> <p>6 said that, but the data are showing it to me.</p> <p>7 Q (By Mr. Williams) In forming your opinions in this</p> <p>8 litigation, you did not do any analysis of whether the</p> <p>9 studies that you relied upon adjusted for body mass</p> <p>10 index, correct?</p> <p>11 A I didn't enumerate that, no.</p> <p>12 Q I would like to ask you about another type of study, the</p> <p>13 meta and the pooled analyses.</p> <p>14 You rely significantly on those study types,</p> <p>15 correct?</p> <p>16 A That's correct.</p> <p>17 Q For the meta and the pooled analysis, the ones with the</p> <p>18 combined data, you believe that the summary relative</p> <p>19 risks for any talc use versus no talc use were</p> <p>20 consistent, true?</p> <p>21 A Yes, I want to look at the--</p> <p>22 Q For reference, in your report, Exhibit No. 2 at Page 56.</p> <p>23 A I want to look at the papers too.</p> <p>24 Q I am just asking about your report, not the papers yet.</p> <p>25 As far as your report is concerned, you believe that</p>	<p style="text-align: right;">Page 180</p> <p>1 case-control studies, the eight case-control studies,</p> <p>2 plus three previous and published studies.</p> <p>3 Q You did not perform your own meta-analysis, right?</p> <p>4 A No, I didn't.</p> <p>5 Q One of the reasons you did not perform your own</p> <p>6 meta-analysis was because you believe that there were</p> <p>7 two, in your words, excellent meta-analyses that had</p> <p>8 recently been published, Penninkilampi and Berge,</p> <p>9 correct?</p> <p>10 A Correct.</p> <p>11 Q "Penninkilampi" is spelled P-E-N-N-I-N-K-I-L-A-M-P-I.</p> <p>12 That was from 2018, correct?</p> <p>13 A Yes.</p> <p>14 Q And the Berge analysis, B-E-R-G-E, was from 2017?</p> <p>15 A Yes.</p> <p>16 Q You believe that those two studies are consistent with</p> <p>17 one another?</p> <p>18 A Yes, they have very similar results.</p> <p>19 Q Do you believe they support your opinion in the case that</p> <p>20 perineal talcum powder can cause ovarian cancer?</p> <p>21 A Yes.</p> <p>22 Q Let me show you the Penninkilampi study. We'll mark it</p> <p>23 as Exhibit No. 15, I believe.</p> <p>24 (Exhibit No. 15 marked</p> <p>25 for identification.)</p>
<p style="text-align: right;">Page 179</p> <p>1 the summary of relative risks for any talc use versus no</p> <p>2 talc use are consistent, right?</p> <p>3 A And where are you, Page 56?</p> <p>4 Q Page 56, the top paragraph, middle of the paragraph,</p> <p>5 sentence starting with, "The summary relative risks,"</p> <p>6 about four lines down.</p> <p>7 A "Were quite consistent," yes, I wrote that.</p> <p>8 Q Are there other ways in which the meta and the pooled</p> <p>9 analyses are consistent, in your opinion?</p> <p>10 A I am not sure what you're asking.</p> <p>11 Q Well, in addition to the notion that the relative risks</p> <p>12 were quite consistent, in your opinion, across the meta</p> <p>13 and the pooled analyses, were there any other ways in</p> <p>14 which those meta and pooled analyses were consistent, any</p> <p>15 other hallmarks of a consistency, other than the relative</p> <p>16 risk rates that you found notable?</p> <p>17 A I think if you could give some examples-- one--</p> <p>18 Q I am just asking you for your expert opinion.</p> <p>19 A One thing that is consistent is that for the two</p> <p>20 meta-analyses that are most recent, which is why I put</p> <p>21 most weight on them, they have all of the previous</p> <p>22 studies included, is that they included the same study,</p> <p>23 so that's similar between those two meta-analyses,</p> <p>24 Penninkilampi and Berge.</p> <p>25 The pooled analysis was a subset of those</p>	<p style="text-align: right;">Page 181</p> <p>1</p> <p>2 Q (By Mr. Williams) Do you recognize Exhibit No. 15,</p> <p>3 Penninkilampi 2018, as one of the two studies that you</p> <p>4 described as excellent and supportive of your opinions?</p> <p>5 A Yes.</p> <p>6 Q Do you know the source or sources of funding for this</p> <p>7 paper?</p> <p>8 A No, I don't.</p> <p>9 Q Do you personally know who the author is?</p> <p>10 A No, I don't.</p> <p>11 Q Do you know what, if any, conflicts of interest any of</p> <p>12 the authors may have?</p> <p>13 A I am just looking to see.</p> <p>14 They claim no conflicts of interest.</p> <p>15 Q Do you know whether some of the authors are serving as</p> <p>16 consultants to Plaintiffs' counsel in this litigation?</p> <p>17 A No, I don't.</p> <p>18 Q Do you have any criticisms of the Penninkilampi 2018</p> <p>19 meta-analysis?</p> <p>20 MS. PARFITT: Objection; form.</p> <p>21 THE WITNESS: I think the only issue</p> <p>22 that I see are based on all of the-- all of the</p> <p>23 meta-analyses had this issue that depends on what results</p> <p>24 were available from the source studies, so if there</p> <p>25 weren't many studies that could do-- that could look at</p>

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<p style="text-align: right;">Page 182</p> <p>1 subgroups, for example, or if there weren't enough--</p> <p>2 wasn't enough information to do dose response-- but by</p> <p>3 doing a meta-analysis, you have the best chance of being</p> <p>4 able to look at these because in the individual study</p> <p>5 those variables are-- the numbers of people within</p> <p>6 particular subgroups is going to be too small to be able</p> <p>7 to do an analysis.</p> <p>8 Q (By Mr. Williams) Did you do an independent verification</p> <p>9 of the data that the Penninkilampi study reports in--</p> <p>10 strike that.</p> <p>11 Did you do an independent verification that the data</p> <p>12 that this study reports is indeed accurate?</p> <p>13 A Did I do a meta-analysis myself on statistics? I did</p> <p>14 not.</p> <p>15 Q No, just whether the data that is reported accurately</p> <p>16 reflects what was reported in the study's records.</p> <p>17 A So there was a supplementary data table for this, I</p> <p>18 assume.</p> <p>19 I am pretty sure I looked at that and then compared</p> <p>20 the relative risk that I abstracted onto my data table,</p> <p>21 and I believe they were similar, but I don't see</p> <p>22 supplementary data here.</p> <p>23 Q Take a look at Page 46 of the document in the lower</p> <p>24 left-hand corner, Page 46 of Exhibit No. 15.</p> <p>25 Do you see that the Penninkilampi study includes,</p>	<p style="text-align: right;">Page 184</p> <p>1 correctly that are implemented.</p> <p>2 What I'm most intrigued by, all the cohort studies I</p> <p>3 reviewed, all seven of them, come up with just about the</p> <p>4 same overall relative risk of ever-use of talcum powder</p> <p>5 products and risk of ovarian cancer. It is consistently</p> <p>6 1.25 to 1.3, and that tells me that this is a robust</p> <p>7 finding because you see it in so many of these studies.</p> <p>8 Q (By Mr. Williams) Would you expect the association for</p> <p>9 long-term perineal talc use, say more than ten years, to</p> <p>10 be greater than, the same, or less than the association</p> <p>11 for any talc use, which could include a single use?</p> <p>12 A I would say it depends on what the individual study had</p> <p>13 in terms of sample size within categories.</p> <p>14 It really depends on sample size, and it depends on</p> <p>15 what the data look like.</p> <p>16 It's a difficult question to answer.</p> <p>17 Q Take a look at Page 46, Figure No. 2 of the Penninkilampi</p> <p>18 study, Exhibit No. 15.</p> <p>19 Do you see the explanation of the tables in Figure</p> <p>20 No. 2?</p> <p>21 Do you see that Table A refers to odds ratios for</p> <p>22 any perineal talc use?</p> <p>23 A Yes.</p> <p>24 Q And the odds ratio for the combined data, the data for</p> <p>25 any talc use in Table A, is 1.31?</p>
<p style="text-align: right;">Page 183</p> <p>1 for each study, a purported odds ratio, a lower limit and</p> <p>2 an upper limit?</p> <p>3 A Yes.</p> <p>4 Q Did you go back to the individual studies to verify that</p> <p>5 the numbers were recorded accurately?</p> <p>6 A I didn't compare the lower and upper limit of the</p> <p>7 confidence interval.</p> <p>8 Q Would it be important to you, in determining that a study</p> <p>9 is excellent, that the authors accurately report the odds</p> <p>10 ratio and the confidence intervals?</p> <p>11 A I think that would be useful, but for a meta-analysis,</p> <p>12 the data that goes into it, to my knowledge, are the odds</p> <p>13 ratios and the sample size, so I am not sure what</p> <p>14 variable-- which particular study you're talking about is</p> <p>15 not reported correctly.</p> <p>16 Q I am asking you whether it's important, not just whether</p> <p>17 it's notable.</p> <p>18 Would it be important to you, in determining--</p> <p>19 concluding that a study is excellent, that the authors</p> <p>20 accurately report the odds ratios and the confidence</p> <p>21 intervals; that is, if they get it wrong, that's not the</p> <p>22 sign of an excellent study, right?</p> <p>23 MS. PARFITT: Objection; form.</p> <p>24 THE WITNESS: I think in many studies</p> <p>25 there may be occasional data that are transformed not</p>	<p style="text-align: right;">Page 185</p> <p>1 Do you see that?</p> <p>2 A Yes.</p> <p>3 Q Now look at Table B.</p> <p>4 Do you see that this table refers to long-term</p> <p>5 perineal talc use?</p> <p>6 A Yes.</p> <p>7 Q The odds ratio for that combined data, the data for</p> <p>8 long-term use, is 1.25.</p> <p>9 Do you see that?</p> <p>10 A Yes.</p> <p>11 Q So as between Penninkilampi's reported overall</p> <p>12 association for any talc use, on the one hand, and its</p> <p>13 reporting for long-term talc use on the other, which one</p> <p>14 reflects a higher risk rate or odds ratio?</p> <p>15 A I would say they're very similar, 1.31 and 1.25, because</p> <p>16 the confidence interval include both, so the confidence</p> <p>17 interval in the top, 1.24 to 1.39, also includes the</p> <p>18 bottom odds ratio of 1.25. That tells me they're very</p> <p>19 similar.</p> <p>20 Q Doctor, I am just asking you a simple question.</p> <p>21 I asked you which one reflects a higher risk rate.</p> <p>22 MS. PARFITT: Objection; form, asked</p> <p>23 and answered.</p> <p>24 THE WITNESS: I am answering as an</p> <p>25 epidemiologist.</p>

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<p style="text-align: right;">Page 186</p> <p>1 We would see those answers as quite similar.</p> <p>2 Q (By Mr. Williams) So epidemiologists would say that 1.31</p> <p>3 and 1.25, with the confidence intervals there, are the</p> <p>4 same?</p> <p>5 A I wouldn't say they're the same.</p> <p>6 Q So which one--</p> <p>7 MS. PARFITT: Counsel, please let her</p> <p>8 finish.</p> <p>9 Thank you.</p> <p>10 THE WITNESS: We wouldn't say they're</p> <p>11 the same, but we would state they could be similar.</p> <p>12 1.31 is clearly larger than 1.25, but they could</p> <p>13 be-- because of those confidence intervals, they could be</p> <p>14 similar numbers.</p> <p>15 Q (By Mr. Williams) When you evaluated the Penninkilampi</p> <p>16 study, did you take note that the authors omitted certain</p> <p>17 cohort data?</p> <p>18 MS. PARFITT: Objection; form.</p> <p>19 THE WITNESS: I noted that they</p> <p>20 included one paper from each study, which is really</p> <p>21 important.</p> <p>22 If you include more than one paper from each study,</p> <p>23 then you're over-counting or counting cases or noncases a</p> <p>24 second time.</p> <p>25 It's really important to only have one cohort</p>	<p style="text-align: right;">Page 188</p> <p>1 misstates her testimony.</p> <p>2 THE WITNESS: I would say because of</p> <p>3 the variable used, it was reasonable that they picked the</p> <p>4 Gonzalez, the first one.</p> <p>5 If the data had been collected in an identical way,</p> <p>6 then the third one would have been incorporated.</p> <p>7 Q (By Mr. Williams) Did the study explain that that was</p> <p>8 the reason why they omitted the Gates 2010 study?</p> <p>9 A I can't remember.</p> <p>10 I think they had an appendix.</p> <p>11 They talk about an appendix here with their</p> <p>12 rationale.</p> <p>13 Q We can check it later, but as you sit here today, can you</p> <p>14 remember any reference to--</p> <p>15 A I can't recall--</p> <p>16 Q Let me finish the question, if I could.</p> <p>17 Doctor, can you remember any reference, as you sit</p> <p>18 here, to the notion that they noted, in Penninkilampi,</p> <p>19 that they were not using the data from Gates 2010?</p> <p>20 MS. PARFITT: If you need to consult</p> <p>21 the document, please do.</p> <p>22 MR. WILLIAMS: My question is not</p> <p>23 asking her to read it.</p> <p>24 Q (By Mr. Williams) My question is whether you remember</p> <p>25 it?</p>
<p style="text-align: right;">Page 187</p> <p>1 represented in each of these meta-analyses.</p> <p>2 Q (By Mr. Williams) But if there had been additional</p> <p>3 cohorts after the first cohort, wouldn't it make sense to</p> <p>4 use the last one rather than the first?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: I think you are talking</p> <p>7 about the Nurses' Health Study.</p> <p>8 Q (By Mr. Williams) I am.</p> <p>9 A Whether they included the first one or the third one,</p> <p>10 because the second one wouldn't do them any good. There</p> <p>11 are only 200 cases. We don't know how they picked those.</p> <p>12 The third one, as I mentioned earlier, the problem</p> <p>13 with the third one is it used a different comparison to--</p> <p>14 than the first one.</p> <p>15 They are not comparing no-use versus ever-use.</p> <p>16 They're comparing no-use plus less-than-once-a-week</p> <p>17 versus higher levels, so you want to compare, as much as</p> <p>18 possible, nonusers versus users, which is-- they are</p> <p>19 trying to look at any ovarian-- sorry, any perineal talc</p> <p>20 use in the Category A would be more accurate to use the</p> <p>21 first Nurses' Health Study.</p> <p>22 Q Should I take your last answer to mean that you believe</p> <p>23 it is a good thing that the Gates 2000 study was omitted</p> <p>24 from the Penninkilampi analysis?</p> <p>25 MS. PARFITT: Objection; form,</p>	<p style="text-align: right;">Page 189</p> <p>1 MS. PARFITT: Without reading the</p> <p>2 document, do you recall?</p> <p>3 THE WITNESS: I don't recall.</p> <p>4 Q (By Mr. Williams) Take a look at Figure No. 2, Table C</p> <p>5 of Page 46 of that study.</p> <p>6 Do you see that it describes the purported</p> <p>7 association for increased risk of serous ovarian cancers?</p> <p>8 A Yes.</p> <p>9 Q And that's reporting the original Berge study from 2010,</p> <p>10 right?</p> <p>11 A 2000? Berge 2000?</p> <p>12 Q Excuse me, not 2010. Pardon me.</p> <p>13 2000-- Berge 2000?</p> <p>14 A Yes.</p> <p>15 Q As you sit there, you don't know-- you don't recall any</p> <p>16 explanation for the omission of the Gates 2010 data,</p> <p>17 right?</p> <p>18 MS. PARFITT: Objection; form.</p> <p>19 MR. WILLIAMS: I'm sorry, did I get an</p> <p>20 answer to that one?</p> <p>21 MS. PARFITT: No. She-- I think she</p> <p>22 is reading the document.</p> <p>23 THE WITNESS: Sorry.</p> <p>24 MS. PARFITT: Take your time.</p> <p>25 MR. WILLIAMS: My question-- well,</p>

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1 hold on.

2 Counsel, that just eats up the time.

3 Q (By Mr. Williams) I am asking-- Doctor--

4 MS. PARFITT: Counsel, you asked--

5 MR. WILLIAMS: Let me finish--

6 MS. PARFITT: Let me finish.

7 You asked her in the middle of a question-- she
8 hasn't answered it.

9 Your question is right there.

10 She hadn't answered it.

11 She is reading the document. That's reflected on
12 the camera.

13 Give her-- if you want an answer to the question,
14 give her an opportunity--

15 Q (By Mr. Williams) Here is the problem, Doctor--

16 MR. WILLIAMS: Are you done, Counsel?

17 MS. PARFITT: I am.

18 Q (By Mr. Williams) Here is the problem, Doctor:

19 If I ask a question that is separate and apart from
20 the document in front of you, and you choose to just read
21 the entire document, all of our time is lost, so when I
22 specifically ask you what you remember as you sit there,
23 I would ask you not to read the document because that's
24 not part of the question.

25 Is that okay with you?

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1 MS. PARFITT: Counsel, that's actually
2 not okay as a question.

3 If the question is asking if this is a memory
4 contest-- when she has the document in front of her, why
5 aren't you allowing her to refer to the document?

6 It's not a memory contest.

7 Q (By Mr. Williams) Here is my question, Doctor:

8 As you sit here, do you remember, one way or the
9 other, whether the Penninkilampi study explains why it
10 omitted any reference to the data from the Gates 2010
11 report--

12 MS. PARFITT: And I'm going to again
13 object.

14 Counsel, if she needs to look-- are you suggesting
15 she can't look at the document to refresh her
16 recollection? Is that what you want the record to
17 reflect.

18 Q (By Mr. Williams) You may answer, Doctor.

19 MS. PARFITT: Take your time, Doctor.

20 THE WITNESS: Looking at the methods
21 here, I don't see that they've mentioned here why they
22 chose particular studies.

23 I do know that it's standard for meta-analysis to
24 only include one study from a cohort.

25 If you included more than one, it would be

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1 considered improper-- improper methodology.

2 Usually these meta-analyses, and I believe they had
3 it too, usually they will have supplementary data that's
4 available also that will give more of their methods and
5 the search terms, and I don't see that in what you've
6 provided here today.

7 Q (By Mr. Williams) Let me ask you to look at the Berge
8 study from 2017. We will mark that as Exhibit No. 16.

9 (Exhibit No. 16 marked
10 for identification.)

11
12 Q (By Mr. Williams) Do you recognize Exhibit No. 16, which
13 is the Berge 2017 study, as the other of the two
14 meta-analyses that you described as excellent?

15 A Yes.

16 Q Please turn to Page 9 of the study.

17 I direct your attention to the left-hand column, the
18 last paragraph before "Acknowledgments."
19 Do you see that?

20 A Yes.

21 Q The Berge study says, "Several aspects of our results,
22 including the heterogeneity of results between
23 case-control and cohort studies and the lack of a dose
24 response with duration and frequency of use, however, do
25 not support a causal interpretation of the association."

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1 Do you see that conclusion?

2 A Yes, I do.

3 Q The author's conclusion that the reported association did
4 not support a causal interpretation, is the opposite of
5 the conclusion that you would come up with in this case,
6 correct?

7 MS. PARFITT: Objection; form.

8 THE WITNESS: That's correct.

9 Q (By Mr. Williams) If you would, keep the Berge 2017
10 paper out.

11 I will also ask you to refer for a moment to your
12 own report, which is Exhibit No. 2, and specifically Page
13 75.

14 There is a table, Table No. 3, of data that you
15 compiled about the various meta-analyses.

16 Do you see that table?

17 A Yes.

18 Q And Berge 2017 is the second one that is referenced?

19 A Yes.

20 Q The right-most column of your table is called, "Dose
21 response," correct?

22 A Yes.

23 Q And I'm going to talk a little more about dose response
24 later, but for now can we agree that under the "Dose
25 response" column for Berge 2017, you wrote, "Yes," for

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<p style="text-align: right;">Page 194</p> <p>1 duration and frequency-- did you write that?</p> <p>2 A Yes.</p> <p>3 Q And then you wrote a colon, and you went on to reflect</p> <p>4 that each ten-year increase in genital talc use was</p> <p>5 associated with a 16 percent increase in relative risk,</p> <p>6 and each increase of one application per week was</p> <p>7 associated with a five percent increase in relative risk.</p> <p>8 Do we have that right?</p> <p>9 A Yes.</p> <p>10 Q Now, if you would, please, turn back to the Berge study.</p> <p>11 Can you just-- we couldn't find it. Maybe you can,</p> <p>12 and this one I do want you to look through it.</p> <p>13 Would you please point out where the figures we just</p> <p>14 discussed from your table are actually reflected in the</p> <p>15 study?</p> <p>16 I'm sure it's there. We just couldn't find it.</p> <p>17 A I am not finding it.</p> <p>18 MS. PARFITT: Counsel, I can make it</p> <p>19 quicker, so we can save on time.</p> <p>20 Do you want me to show her where it is or have her</p> <p>21 keep looking?</p> <p>22 MR. WILLIAMS: I actually prefer that</p> <p>23 that not be what we do.</p> <p>24 MS. PARFITT: All right. I am just</p> <p>25 trying to move time along.</p>	<p style="text-align: right;">Page 196</p> <p>1 MS. PARFITT: Counsel, there are.</p> <p>2 If I can help, there's two Berge papers. One talks</p> <p>3 about the dose response and one does not, and I think you</p> <p>4 handed her the copy about-- that does not address the</p> <p>5 dose response, and the one she has in her binder</p> <p>6 addresses the dose response, both 2018 and very</p> <p>7 confusing, but--</p> <p>8 MR. WILLIAMS: So they are two</p> <p>9 different studies entirely?</p> <p>10 MS. PARFITT: No, they are actually</p> <p>11 very, very close, but one addressed the dose response and</p> <p>12 one did not.</p> <p>13 One, Doctor-- just for clarify, the one that</p> <p>14 Mr. McTiernan has in her notebook and that you all have</p> <p>15 in your reference material is Exhibit No.-- Reference</p> <p>16 No.-- what is that?</p> <p>17 THE WITNESS: 35.</p> <p>18 MS. PARFITT: 35 in the notebook,</p> <p>19 which is the Berge study that deals with the dose</p> <p>20 response.</p> <p>21 The one you handed her is the Berge that does not</p> <p>22 address the dose response or indicated there was no</p> <p>23 trend.</p> <p>24 MR. WILLIAMS: Let's mark for the</p> <p>25 record the one that Dr. McTiernan has in her hand as</p>
<p style="text-align: right;">Page 195</p> <p>1 Q (By Mr. Williams) If you could turn to Page 6 of the</p> <p>2 Berge meta-analysis, in the left-hand side, Table No. 3</p> <p>3 there, it says there-- it has a table in Table No. 3 that</p> <p>4 lists the duration of frequency, "Ever use of genital</p> <p>5 talc - results of meta-analysis."</p> <p>6 Do you see that?</p> <p>7 A Yes, Table No. 3?</p> <p>8 Q Right.</p> <p>9 It says, "Duration, ten years," and then there's a</p> <p>10 risk ratio of 0.97, with a confidence interval that drops</p> <p>11 below 1.0.</p> <p>12 Do you see that?</p> <p>13 A It looks like you have a different version than I have.</p> <p>14 Q Do I?</p> <p>15 A Yeah.</p> <p>16 Yours is-- my table looks different.</p> <p>17 That's odd.</p> <p>18 Q Are you looking at the-- I see, you are comparing-- just</p> <p>19 for the record, you are comparing what we gave you as</p> <p>20 Exhibit No. 16 with something in a notebook.</p> <p>21 Which notebook are you looking in?</p> <p>22 A My data-- all the references that I used.</p> <p>23 Q Okay.</p> <p>24 A I am just wondering--</p> <p>25 Q Are there different versions of it?</p>	<p style="text-align: right;">Page 197</p> <p>1 Exhibit No. 16A.</p> <p>2 MS. PARFITT: Very good.</p> <p>3 (Exhibit No. 16A marked</p> <p>4 for identification.)</p> <p>5</p> <p>6 MR. WILLIAMS: Do you happen to have</p> <p>7 another copy of that one?</p> <p>8 MS. PARFITT: Yeah, I can check.</p> <p>9 MR. WILLIAMS: Thank you.</p> <p>10 Q (By Mr. Williams) If you could look at Exhibit No. 16,</p> <p>11 and turn to Page 7.</p> <p>12 A So we are back to the other one?</p> <p>13 Q The original--</p> <p>14 A That I did not reference?</p> <p>15 Q Exhibit No. 16.</p> <p>16 Do you have that in front of you?</p> <p>17 A Page 7?</p> <p>18 Q Page 7, the right-hand column.</p> <p>19 Do you see in the right-hand column it says, "The</p> <p>20 presence or absence of a dose response is an important</p> <p>21 aspect to consider in assessing the plausibility of the</p> <p>22 causal nature of an association observed in a</p> <p>23 meta-analysis"?</p> <p>24 Did I read that right?</p> <p>25 A Yes, and the other version says the same thing.</p>

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<p style="text-align: right;">Page 198</p> <p>1 Q Okay. It goes on to say, I believe in both versions, 2 "Although the numbers of studies included in the analysis 3 of duration and frequency of genital talc use was not 4 very large, and the exclusion of the reference category 5 from the dose response analysis might have reduced the 6 power of this analysis, the lack of a dose response -- 7 irrespective on an analytical approach chosen to combine 8 categorical results across studies -- is a potentially 9 important and novel contribution of this meta-analysis." 10 Did I read that right? 11 A Except the next version does not say, "lack of"-- if you 12 read the paragraph from 16A, it does not say "lack of 13 dose response." 14 You have that right there. 15 They have taken out that. 16 They must have replaced this table with a corrected 17 table, because that does show dose response in Table 18 No. 3. 19 Q So Table No. 3 in the two different versions of the Berge 20 study are different? 21 A Yes. 22 That's why I was so confused. 23 My data and my table was identical-- I abstracted 24 this. 25 MS. PARFITT: "This" being 16A?</p>	<p style="text-align: right;">Page 200</p> <p>1 MS. PARFITT: Objection; form. 2 THE WITNESS: And I tend to look at 3 data, not necessarily what somebody has written as their 4 conclusion. 5 The data to me show that there is an increased risk 6 of ovarian cancer with use of talcum powder products, and 7 I think their data show it very clearly, and they have 8 shown dose response relationships as well. 9 Q (By Mr. Williams) My question to you is a little bit 10 different. 11 My question is: 12 You disagree-- strike that. 13 You disagree with the conclusion reached by the 14 authors of the Berge study in that last sentence of their 15 report that finds heterogeneity between the results of 16 case-control and cohort studies, correct? 17 MS. PARFITT: Objection; form, 18 misstates her testimony. 19 THE WITNESS: So you are only asking 20 about the first part of that sentence not the causal 21 interpretation, but the first part; is that correct? 22 Q (By Mr. Williams) I am asking about the entirety of the 23 sentence. 24 A The entirety of the sentence? 25 So yes, there was heterogeneity between the</p>
<p style="text-align: right;">Page 199</p> <p>1 THE WITNESS: 16A, the version I used, 2 and that's the version that was on the website and my 3 library. 4 Q (By Mr. Williams) Did you at any time read this study 5 that was marked as Exhibit No. 16? 6 A No. 7 Q And how did you access the version at 16A? 8 A This one I would have gotten from my Fred Hutch library. 9 Q Let me have you look at Exhibit No. 16A. 10 Do you have Page 9 in front of you? 11 Can you turn to that page, just before the 12 acknowledgments? 13 A Okay. 14 Q And this is the conclusion paragraph. 15 Do you see that it begins, "In conclusion"? 16 A Yes. 17 Q In the 16A version that you have in front of you they 18 wrote, "Several aspects of our results, including the 19 heterogeneity of results between case-control and cohort 20 studies, however, do not support a causal interpretation 21 of the association." 22 Do you see that? 23 A Yes. 24 Q And that was the conclusion of the Berge study from 2017 25 in both versions 16 and 16A, correct?</p>	<p style="text-align: right;">Page 201</p> <p>1 case-control and cohort studies, but no, I do not think 2 that that detracts from the causal association. 3 Q What was the heterogeneity and the results between the 4 case-control and the cohort studies that you observed? 5 A There was a smaller increase in risk with the 6 case-control studies. 7 Q How much smaller? 8 A Quite a bit. 9 The relative risk was 1.02 in the cohort studies, 10 1.26 in the case-control studies. 11 Q And you conclude, based upon your own analysis, totally 12 separate from the Berge study-- you conclude, based on 13 your own analysis, that that disparity, 1.02 for the 14 cohorts, 1.26 for the case-control studies, constitutes 15 heterogeneity between those two types of studies? 16 MS. PARFITT: Objection; misstates her 17 testimony. 18 She says she relied on the data. 19 MR. WILLIAMS: Counsel, I would ask 20 you not to coach. 21 MS. PARFITT: I am not coaching. 22 Let the record reflect I am not coaching. I am 23 making it clear. 24 THE WITNESS: I agreed that there's 25 heterogeneity between those two sets of results, but that</p>

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<p>1 it does not subtract from the causal interpretation.</p> <p>2 The other thing I note when I look at a figure like</p> <p>3 this, Figure No. 2 in that Berge paper, that almost all</p> <p>4 of the relative risks are to the right of the line; "the</p> <p>5 line" being the line where the relative risk would be one</p> <p>6 or no effect.</p> <p>7 It's unusual to see so many studies with the</p> <p>8 relative risk over on the right side.</p> <p>9 I review a lot of meta-analyses, so this is unusual</p> <p>10 to see that level of consistency.</p> <p>11 Q (By Mr. Williams) So just so we're clear, you disagree</p> <p>12 with the second half, the second clause of the final</p> <p>13 sentence in the Berge study, but you agree with the first</p> <p>14 portion, correct?</p> <p>15 MS. PARFITT: Objection; form,</p> <p>16 misstates her testimony.</p> <p>17 THE WITNESS: I agree that the cohort</p> <p>18 studies have lower relative risks than do the</p> <p>19 case-control studies, yes.</p> <p>20 Q (By Mr. Williams) And you agree that that makes them</p> <p>21 heterogeneous, correct?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 Q (By Mr. Williams) Those two different types of studies?</p> <p>24 MS. PARFITT: Objection; form.</p> <p>25 THE WITNESS: That's part of the</p>	<p>1 A Ms. Parfitt sent them.</p> <p>2 Q Did she--</p> <p>3 A I am trying to remember if there was a website as well.</p> <p>4 Q Do you know how she obtained them?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: I do not know.</p> <p>7 Q (By Mr. Williams) Are you relying on the Taher 2018</p> <p>8 study for your opinion in this litigation?</p> <p>9 A I am not relying on the study, but it did add to my-- it</p> <p>10 does substantiate my opinion.</p> <p>11 It's very similar results to what we saw in the</p> <p>12 other meta-analyses.</p> <p>13 Q Is the Taher 2018 article peer-reviewed?</p> <p>14 A Not to my knowledge, but I don't know what process it</p> <p>15 went through to get to this point.</p> <p>16 Q Do you know one way or the other whether it has been</p> <p>17 accepted for publication?</p> <p>18 A I don't know.</p> <p>19 Q Do you know the source or sources of funding for the</p> <p>20 Taher 2018 article?</p> <p>21 A I think it said Health Canada, but--</p> <p>22 Q Other than the reference to Health Canada-- it references</p> <p>23 a contract with Health Canada.</p> <p>24 Other than that, do you have any knowledge as to the</p> <p>25 sources of funding?</p>
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<p>1 definition of "heterogeneity," is to see differences.</p> <p>2 Q (By Mr. Williams) Let me ask you some questions about</p> <p>3 the Taher 2018 study.</p> <p>4 We will mark that study as Exhibit No. 17.</p> <p>5 (Exhibit No. 17 marked</p> <p>6 for identification.)</p> <p>7</p> <p>8 Q (By Mr. Williams) The Taher 2018 study is not one of the</p> <p>9 articles that you originally included in your reference</p> <p>10 list, right?</p> <p>11 A That's correct.</p> <p>12 It was made public after my report was submitted.</p> <p>13 Q It is included in the additional materials to Dr. Anne</p> <p>14 McTiernan, a listing that we marked earlier today?</p> <p>15 A Yes.</p> <p>16 Q Have you read the entire transcript?</p> <p>17 A Yes, I have.</p> <p>18 Q Did you have access to this article before it was</p> <p>19 published?</p> <p>20 A It's not published. It's a draft manuscript.</p> <p>21 Q Do you have access to the appendixes or supplemental</p> <p>22 tables that are referenced in the publication?</p> <p>23 A Yes.</p> <p>24 I don't have them with me, but I did have access.</p> <p>25 Q How did you have access to them?</p>	<p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: All I know is source of</p> <p>3 funding is Health Canada, what it says in the paper.</p> <p>4 Q (By Mr. Williams) Do you personally know any of the</p> <p>5 authors who are listed on the first page?</p> <p>6 A No, I don't.</p> <p>7 Q Have you discussed your opinion on talc and ovarian</p> <p>8 cancer with any of those authors?</p> <p>9 A No, I haven't.</p> <p>10 Q Do you know what conflicts of interest, if any, the</p> <p>11 authors may have?</p> <p>12 MS. PARFITT: Objection; form.</p> <p>13 THE WITNESS: No, I don't.</p> <p>14 Q (By Mr. Williams) Do you know whether some of the</p> <p>15 authors are serving as consultants to the plaintiffs in</p> <p>16 this litigation?</p> <p>17 A No, I don't.</p> <p>18 Q Were you asked to be a co-author of that paper?</p> <p>19 A No, I wasn't.</p> <p>20 Q Did you provide comments to it?</p> <p>21 A No, I didn't.</p> <p>22 Q Did the authors ever consult you in any way in connection</p> <p>23 with their publication?</p> <p>24 A No, they didn't.</p> <p>25 Q Did you attend the National Cancer Institute directors'</p>

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<p>1 meeting in Lyon, France on July 11, 2013 of last year,</p> <p>2 2018?</p> <p>3 A No, I didn't.</p> <p>4 Q The Taher study contains a meta-analysis, right?</p> <p>5 A That's correct.</p> <p>6 Q If you turn to Page 28, Page 28 calculates or reports an</p> <p>7 overall relative risk of 1.28 with a confidence interval</p> <p>8 of 1.20 to 1.37, right?</p> <p>9 A It's written there-- okay, yes.</p> <p>10 Q If you turn to Page 49, under the heading, "Conclusion,"</p> <p>11 the very last sentence says, in part, "The present</p> <p>12 comprehensive evaluation of all currently available</p> <p>13 relevant data indicates that perineal exposure to talc</p> <p>14 powder is a possible cause of ovarian cancer in humans,"</p> <p>15 right?</p> <p>16 A Yes, I see that.</p> <p>17 Q Do you agree that the 2018 paper represents a</p> <p>18 comprehensive evaluation of all currently available</p> <p>19 relative data?</p> <p>20 A It appeared to be a relevant meta-analysis.</p> <p>21 As you mentioned, it's not peer-reviewed.</p> <p>22 I would like to see it be peer-reviewed, but it has</p> <p>23 a remarkably similar relative risk of the other</p> <p>24 meta-analyses that I've reviewed that were peer-reviewed,</p> <p>25 so not only the most recent comprehensive ones but also</p>	<p>1 International Association for Research of Cancer, 2010</p> <p>2 monograph with respect to perineal use of talc, right?</p> <p>3 MS. PARFITT: Objection; form.</p> <p>4 THE WITNESS: 2010 monograph was from</p> <p>5 data up until 2007, so they did not have the benefit of</p> <p>6 the last ten years.</p> <p>7 I believe IARC would have given a stronger</p> <p>8 characterization of talcum powder applied to the perineum</p> <p>9 if they were to review the data today, but they did</p> <p>10 categorize talcum applied to the perineum as a possible</p> <p>11 carcinogen Grade 2B.</p> <p>12 Q (By Mr. Williams) I would move to strike that as</p> <p>13 nonresponsive, Doctor, but my question is:</p> <p>14 You are speculating when you say what IARC would or</p> <p>15 would not have done; are you not?</p> <p>16 MS. PARFITT: Objection--</p> <p>17 THE WITNESS: Correct.</p> <p>18 Q (By Mr. Williams) In fact, and point of fact, in 2010</p> <p>19 IARC, in the 2010 monograph, reached a conclusion that</p> <p>20 perineal exposure to talcum powder is a possible cause of</p> <p>21 ovarian cancer, and they put it in Group 2B, right?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: Using data that they had</p> <p>24 available and through 2007, then yes, they classified it</p> <p>25 that way in 2B.</p>
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<p>1 the previous meta-analyses.</p> <p>2 Q Do you agree with the conclusion of the authors in Taher</p> <p>3 2018 that perineal exposure to talcum powder is a</p> <p>4 possible cause of ovarian cancer in humans?</p> <p>5 A I believe that it is a cause of ovarian cancer in humans.</p> <p>6 Q My question is different.</p> <p>7 My question is whether you agree with the conclusion</p> <p>8 of the authors, what they wrote here, which is that</p> <p>9 perineal exposure to talcum powder is a possible cause of</p> <p>10 ovarian cancer in humans.</p> <p>11 A And I am saying I would use a stronger statement than</p> <p>12 that.</p> <p>13 I would say these data support a causal association</p> <p>14 with cancer, ovarian cancer.</p> <p>15 Q So you disagree with them?</p> <p>16 A Yes.</p> <p>17 Q It would be faster if you just do that upfront.</p> <p>18 A I like to be exact. Sorry.</p> <p>19 Q Just so we're clear, you disagree with the conclusion of</p> <p>20 the authors in the Taher study, that talcum powder is a</p> <p>21 possible cause of ovarian cancer in humans, right?</p> <p>22 A I believe that talcum powder product use is the cause of</p> <p>23 ovarian cancer in humans, based on my review.</p> <p>24 Q The conclusion in this Taher 2018 article is the same as</p> <p>25 that-- as the conclusion that was reached in the IARC,</p>	<p>1 Q (By Mr. Williams) Do you have any criticisms of the</p> <p>2 Taher 2018 meta-analysis?</p> <p>3 A As I mentioned before, it has remarkable similar results</p> <p>4 to the other meta-analyses, so that gave me some</p> <p>5 confidence.</p> <p>6 I was a little curious why they picked-- I think</p> <p>7 it's some of the supplementary tables.</p> <p>8 They picked relative risk for some of the-- a couple</p> <p>9 of the studies that I would not have picked, and some of</p> <p>10 the meta-analyses did not pick-- when many of the studies</p> <p>11 have presented data, it's a little difficult to tell</p> <p>12 which of the data are the most basic, meaning no use of</p> <p>13 talcum powder products to the perineum versus any use,</p> <p>14 and sometimes it's difficult to determine which is the</p> <p>15 correct relative risk to pick, odds ratio, but I don't</p> <p>16 have that here, don't have the supplemental data here.</p> <p>17 Q Other than what you've just expressed, do you have any</p> <p>18 other criticisms?</p> <p>19 A I didn't see other concerns.</p> <p>20 I think Table No. 2, the summary for the Bradford</p> <p>21 Hill criteria of causation, they--</p> <p>22 Q Could you give me the page?</p> <p>23 A I'm sorry, Page 25, Table No. 2.</p> <p>24 Q Thank you.</p> <p>25 A The question I had there is when they looked at strengths</p>

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<p>1 of association, they looked across individual studies and</p> <p>2 didn't take into account the meta-analyses, so I think</p> <p>3 they could have used their own data as well as the other</p> <p>4 meta-analyses, and they could have mentioned that there</p> <p>5 as part of strengths of association.</p> <p>6 Q Have you now listed all of your criticisms of the study?</p> <p>7 A Yes, I believe so.</p> <p>8 Q Do you believe it was improper of the authors of this</p> <p>9 study to include both the Wu 2009 and the Wu 2015 studies</p> <p>10 in the meta-analysis, as reflected on Page 29?</p> <p>11 A I would have to look back and see if those are the same--</p> <p>12 if they include some of the same cases.</p> <p>13 Q If they included the same cases, then for the reasons you</p> <p>14 described earlier today, you would criticize this study</p> <p>15 because there would be double counting, right?</p> <p>16 MS. PARFITT: Objection.</p> <p>17 THE WITNESS: Yes.</p> <p>18 Q (By Mr. Williams) Please turn to Page 3 on-- Figure</p> <p>19 No. 3 on Page 39.</p> <p>20 It says, underneath that table, "Figure No. 3:</p> <p>21 Ovarian cancer risk estimates at increasing levels of</p> <p>22 exposure to talc, as reported from multiple studies."</p> <p>23 Do you see that?</p> <p>24 A Yes.</p> <p>25 Q Does Figure No. 3 provide evidence of a dose-response</p>	<p>1 THE WITNESS: That's what they stated,</p> <p>2 yes.</p> <p>3 Q (By Mr. Williams) And the importance of statistical</p> <p>4 significance is-- strike that.</p> <p>5 Statistical significance is evaluated in order for</p> <p>6 epidemiologists and other researchers to try to rule out</p> <p>7 chance, right?</p> <p>8 A Statistical significance depends largely on sample size,</p> <p>9 and it's merely a probability, so if you have a P value</p> <p>10 of 0.05, it means you have a five percent chance of</p> <p>11 making an error.</p> <p>12 There's nothing magical about 0.05.</p> <p>13 0.06 could be a very relevant study as well.</p> <p>14 Statistical significance is often determined-- it's</p> <p>15 often thought to be statistically significant if the P</p> <p>16 value is less than or equal to 0.05.</p> <p>17 As I said, it's not magical.</p> <p>18 It really depends on sample size, so when I look at</p> <p>19 studies, I look at the totality of evidence, I look at</p> <p>20 consistency, and I look at whether the relative risk is</p> <p>21 above one consistently.</p> <p>22 Q What I'm trying to get at, Doctor, is whether-- is the</p> <p>23 purpose of statistical significance.</p> <p>24 Will you agree with me, and you can say "no," you</p> <p>25 can say "yes," you can say "maybe," but do you agree with</p>
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<p>1 relationship, in your opinion?</p> <p>2 A I don't think I could evaluate that because I don't see</p> <p>3 an explanation of where they get that data from.</p> <p>4 Q Let me ask you to look back on-- at Page 29-- actually,</p> <p>5 Page 25. Excuse me.</p> <p>6 Do you see where it says, "Consistency: 15 out of</p> <p>7 30 studies reported positive and significant associations</p> <p>8 reported in:" and then there's a colon and four bullet</p> <p>9 points?</p> <p>10 Do you see that?</p> <p>11 A Yes.</p> <p>12 Q 15 out of 30 is 50 percent of the case-control studies,</p> <p>13 right-- 15 out of 30 is 50 percent of the total number of</p> <p>14 studies reported, right?</p> <p>15 MS. PARFITT: Objection; form.</p> <p>16 THE WITNESS: Yes, that would be 50</p> <p>17 percent.</p> <p>18 Q (By Mr. Williams) And 50 percent of the studies did not</p> <p>19 find a positive significant association that was</p> <p>20 statistically significant, correct?</p> <p>21 MS. PARFITT: Objection; form,</p> <p>22 misstates the data.</p> <p>23 THE WITNESS: You are asking me if</p> <p>24 that's what it stated?</p> <p>25 MR. WILLIAMS: Yes.</p>	<p>1 me or not that the purpose of evaluating statistical</p> <p>2 significance is to try to rule out the possibility that</p> <p>3 results are a result of chance?</p> <p>4 A I would modify that.</p> <p>5 I would say you would look at a statistical test in</p> <p>6 order to determine what is the likelihood that chance</p> <p>7 explained your result.</p> <p>8 I wouldn't say the word "rule out," because, as I</p> <p>9 mentioned, a P value of 0.06 could be as relevant as a P</p> <p>10 value of 0.05.</p> <p>11 It really depends on the sample size.</p> <p>12 Q You are familiar with IARC ratings?</p> <p>13 You mentioned them earlier today, right?</p> <p>14 A Yes.</p> <p>15 Q And you know that IARC ratings for Group 2B, which is</p> <p>16 what IARC found for talc in 2006, I think, was that talc</p> <p>17 should be listed as a possible cause of ovarian cancer,</p> <p>18 correct?</p> <p>19 MS. PARFITT: Objection; misstates the</p> <p>20 document.</p> <p>21 THE WITNESS: Maybe I should reframe</p> <p>22 my answer.</p> <p>23 My understanding is a classification 2B means a</p> <p>24 possible carcinogen.</p> <p>25 Q (By Mr. Williams) Okay. And as you sit there, can you</p>

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<p style="text-align: right;">Page 214</p> <p>1 tell us what the definition of a Group 2B substance is,</p> <p>2 according to IARC?</p> <p>3 A I don't have that memorized.</p> <p>4 I do know that there are different panels set up for</p> <p>5 each carcinogen, and there is an overall group that helps</p> <p>6 the scientists to decide what classification to put</p> <p>7 something in, but that-- it's not a clear-cut,</p> <p>8 necessarily.</p> <p>9 The scientific panel has to look at the totality of</p> <p>10 evidence as they decide what level of evidence they have.</p> <p>11 Q Does it sound familiar to you that in assigning a Group</p> <p>12 2B status for talcum powder, that the IARC team concluded</p> <p>13 that chance, bias, and confounding factors could not be</p> <p>14 ruled out?</p> <p>15 A I don't have the document in front of me.</p> <p>16 I would need to look at that.</p> <p>17 Do we have it?</p> <p>18 Q We do, and I will get to it in a minute.</p> <p>19 I am asking you, as you sit here, do you have any</p> <p>20 memory that the way that IARC analyzes whether a</p> <p>21 substance is in Group 2B or some other grouping, is that</p> <p>22 if chance, bias, and confounding factors cannot be ruled</p> <p>23 out, then the substance should be in Group 2B?</p> <p>24 MS. PARFITT: Objection; form.</p> <p>25 Again, object to the memory aspect of this.</p>	<p style="text-align: right;">Page 216</p> <p>1 Q There you refer to sample size as opposed to the number</p> <p>2 of cases, did you not, in that sentence that I just read</p> <p>3 you?</p> <p>4 A The reason I'm hesitating is I do two sample size</p> <p>5 calculations.</p> <p>6 In here I am talking about calculation-- I was</p> <p>7 talking about the sample sizes from case-control studies,</p> <p>8 and after this link that I provide, the calculation</p> <p>9 showed the minimum number of cases in controls need to be</p> <p>10 931 each, and then there's another place where I</p> <p>11 calculate the cohort sizes.</p> <p>12 Q Can we stay here for just one moment on Page 48?</p> <p>13 A Yes.</p> <p>14 Q First of all, you performed what is known as a power</p> <p>15 calculation to determine the sample size that you</p> <p>16 believed is required for a study?</p> <p>17 A That's correct.</p> <p>18 Q And you place particular importance, you told me a moment</p> <p>19 ago, on the number of cancer cases total, correct?</p> <p>20 A That's correct.</p> <p>21 Q Based on your calculation, you concluded that the minimum</p> <p>22 number of cases would need to be 931, correct?</p> <p>23 A That's correct, to have-- to have good power to detect</p> <p>24 relative risk of 1.3 with statistical significance of</p> <p>25 0.05.</p>
<p style="text-align: right;">Page 215</p> <p>1 If there's a document available, you should show it</p> <p>2 to her.</p> <p>3 THE WITNESS: And I can't remember.</p> <p>4 Q (By Mr. Williams) One reason that you have stated for</p> <p>5 the lack of statistical significance in cohort studies is</p> <p>6 the sample size in those studies, correct?</p> <p>7 A The number of cases, the sample size of cases, yes.</p> <p>8 Q Right.</p> <p>9 So now in your last answer, you are distinguishing</p> <p>10 between the total sample size on the one hand and the</p> <p>11 number of cases of cancer on the other, correct?</p> <p>12 A Yes.</p> <p>13 Q What's important for your analysis, in terms of sample</p> <p>14 size, is the number of cancer cases?</p> <p>15 A That's correct.</p> <p>16 Q You believe that the number of cases affects the</p> <p>17 statistical power of the studies?</p> <p>18 A Yes.</p> <p>19 Q Doctor, let me ask you about your report though.</p> <p>20 If you could look at Exhibit No. 2, Page 48, do you</p> <p>21 see there in the middle of the page it says, "I interpret</p> <p>22 the lack of statistical significance in some source</p> <p>23 studies as being due to the small sample sizes of many of</p> <p>24 these studies"?</p> <p>25 A Yes.</p>	<p style="text-align: right;">Page 217</p> <p>1 Q You also concluded that the minimum number of controls</p> <p>2 would need to be 931, correct?</p> <p>3 A That's the simplest model.</p> <p>4 Different case-control studies will have different</p> <p>5 numbers, and that can affect the power one way or the</p> <p>6 other.</p> <p>7 I just did a simple calculation, but you could have</p> <p>8 power increased by having a small number more of controls</p> <p>9 or a small number of more cases, so it depends on how--</p> <p>10 how it ends up working out, but this is the simplest</p> <p>11 model.</p> <p>12 Q The point you were making in performing your power</p> <p>13 calculation was that meta-analyses, with their larger</p> <p>14 combined sample sizes, can be used to overcome that lack</p> <p>15 of statistical power; is that true?</p> <p>16 A Yes.</p> <p>17 Q One of the two meta-analyses that you called excellent</p> <p>18 combine data from three of the cohort studies to arrive</p> <p>19 at a single risk estimate.</p> <p>20 Do you remember that?</p> <p>21 A No, I don't.</p> <p>22 Which study?</p> <p>23 Q Let me ask you to look at the 2017 Berge analysis, and</p> <p>24 let's use Exhibit No. 16A.</p> <p>25 MS. PARFITT: Not cutting you off</p>

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<p style="text-align: right;">Page 218</p> <p>1 right now, but maybe when you get to a good place, we can 2 take a break.</p> <p>3 MR. WILLIAMS: Okay. Sure.</p> <p>4 Q (By Mr. Williams) Do you have Exhibit No. 16A in front 5 of you?</p> <p>6 A I do.</p> <p>7 Q And I would like to have you focus on Page-- I believe 8 it's 7, Figure No. 2.</p> <p>9 Do you see where the authors list the three cohort 10 studies they analyzed?</p> <p>11 A Yes.</p> <p>12 Q Gates 2010, Houghton 2014, Gonzalez 2016?</p> <p>13 A Hold on a minute.</p> <p>14 Q And "Houghton" is--</p> <p>15 A Sorry.</p> <p>16 (Phone interruption) I was getting a call on this. 17 I am going to turn it off.</p> <p>18 Q Do you see in the middle of Page 7 the reference to 19 Gates, Houghton, and Gonzalez?</p> <p>20 Do you see the reference in Figure No. 2, middle of 21 the page, that says, "Cohort studies," and it references 22 those three studies?</p> <p>23 A Yes.</p> <p>24 Q And "Houghton," for the record, is H-O-U-G-H-T-O-N. 25 Now, look back one page to Page 6 of Exhibit</p>	<p style="text-align: right;">Page 220</p> <p>1 Q If you add those two numbers together, what do you get?</p> <p>2 A I don't know exactly-- over 1300.</p> <p>3 Q 1300 is more than 931, correct?</p> <p>4 A Yes.</p> <p>5 Q 900 and 1300-- to be precise, it's 1372. You add those 6 two numbers together.</p> <p>7 1372 cancer cases is well above the 931 that you 8 calculated would be necessary to find statistical 9 significance, right?</p> <p>10 A Yes.</p> <p>11 Q And because of the nature of cohort studies, there were 12 also many times that the number of women who did not get 13 ovarian cancer-- right-- that's a separate number?</p> <p>14 A What did you say about the cohort studies?</p> <p>15 Q In addition to the cases where women ultimately, 16 unfortunately, were diagnosed with cancer, the 1372, 17 there are many times that number of women who were 18 followed along in their lives who did not get ovarian 19 cancer, correct?</p> <p>20 A Yes.</p> <p>21 Q So this meta-analysis is sufficient, under your power 22 calculation, to be able to find a statistically 23 significant association, true?</p> <p>24 A Yes, and that's why overall we see 1.22 is statistically 25 significant.</p>
<p style="text-align: right;">Page 219</p> <p>1 No. 16A, and take a look at the paragraph starting at the 2 top of the right column.</p> <p>3 Do you see that one?</p> <p>4 A Yes.</p> <p>5 Q About halfway down that paragraph the authors state as 6 follows, "It should be noted that the cohort studies 7 included in the meta-analysis comprised a total of 429 8 cases of ovarian cases exposed to genital talc and 943 9 unexposed cases: the statistical power of the 10 meta-analysis of these cohort studies to detect a risk 11 ratio of 1.25, similar to the result of the meta-analysis 12 of case-control studies, was 0.99. Thus, low power of 13 cohort studies cannot be invoked as explanation of the 14 heterogeneity of results."</p> <p>15 Did I read that correctly?</p> <p>16 A Yes, you did.</p> <p>17 Q Now, they reference here in the Berge study-- strike 18 that. Let me start over.</p> <p>19 The Berge study is one of the two meta-analyses that 20 you said is an excellent study, correct?</p> <p>21 A Yes.</p> <p>22 Q And what they list here on Page No. 6 is 429 cases of 23 ovarian cancer and 943 unexposed cases.</p> <p>24 Is that correct?</p> <p>25 A Yes.</p>	<p style="text-align: right;">Page 221</p> <p>1 Q Please explain.</p> <p>2 A Pardon?</p> <p>3 Q Please explain your answer.</p> <p>4 A The overall relative risk of 1.22, the confidence 5 interval is 1.13 to 1.3-- you see the overall 6 statistically significant effect.</p> <p>7 Q That wasn't what they concluded for the cohort studies 8 though, correct?</p> <p>9 The cohort studies had the following on page-- I am 10 looking at Page 7, Figure No. 2.</p> <p>11 The cohort studies, for Gates it was 1.12, for 12 Gonzalez it was 0.73-- excuse me, I misspoke.</p> <p>13 For Gates it was 1.06, for Houghton it was 1.12, and 14 for Gonzalez the relative risk was 0.73, correct?</p> <p>15 A 0.73, yes.</p> <p>16 Q So if you look at the cohort studies, separate and apart 17 from the case-control studies that are listed above, we 18 can agree that the relative risk is nowhere near 1.22?</p> <p>19 MS. PARFITT: Objection; form.</p> <p>20 Q (By Mr. Williams) Right?</p> <p>21 MS. PARFITT: Objection; form.</p> <p>22 THE WITNESS: Yeah, I think the-- the 23 way I look at the meta-analysis, is I look at all of the 24 studies together.</p> <p>25 I don't just look at one particular type separate</p>

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<p>1 from others, but as an example, the Houghton study, which</p> <p>2 had about 400 cases, I believe, the Women's Health</p> <p>3 Initiative, with a relative risk of 1.12, if they had had</p> <p>4 900 cases, that probably would have been a statistically</p> <p>5 significant result, so that's what the power calculation</p> <p>6 does.</p> <p>7 In this case you have the Gonzalez-- the sister</p> <p>8 study is what brings the relative risk down closer to one</p> <p>9 because you do have one negative result there, but</p> <p>10 overall, looking at all of the meta-analyses-- all of the</p> <p>11 studies together, you see definitely a trend towards a</p> <p>12 relative risk consistently above one.</p> <p>13 Q (By Mr. Williams) Now-- have you completed your answer?</p> <p>14 A Yes.</p> <p>15 Q You just mentioned a moment ago that with a relative risk</p> <p>16 of 1.12, if they had 900 cases, they probably would have</p> <p>17 been a statistically significant-- that probably would</p> <p>18 have been a statistically significant result.</p> <p>19 When you say that that probably would have been the</p> <p>20 case in the women's health study, you're speculating</p> <p>21 there, aren't you?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: I am speculating from my</p> <p>24 previous experience with working with the Women's Health</p> <p>25 Initiative, that with very large numbers of cases if you</p>	<p>1 that was available at the time, and in total that's what</p> <p>2 I look at.</p> <p>3 The issue with the cohort studies are that the</p> <p>4 information on talcum powder product use was collected at</p> <p>5 one point in time. It was never updated, and it was not</p> <p>6 retrospective, so we don't know what-- lifetime use in</p> <p>7 those cohort studies.</p> <p>8 Q (By Mr. Williams) We'll take a break in a moment, but my</p> <p>9 question before the break is this:</p> <p>10 I was asking, for purposes of my question, for you</p> <p>11 to exclude case-control studies from your analysis.</p> <p>12 My question was:</p> <p>13 If you were doing an analysis that had been based on</p> <p>14 the cohort studies, and not on your analysis of the</p> <p>15 case-control study relative risks, you would not have</p> <p>16 been able to conclude that perineal use of talc causes</p> <p>17 ovarian cancer with a 1.02 relative risk that is not</p> <p>18 statistically significant, right?</p> <p>19 MS. PARFITT: Objection; form,</p> <p>20 misstates her testimony and her opinions.</p> <p>21 THE WITNESS: I think that's</p> <p>22 speculative because I wouldn't have ignored the</p> <p>23 significant amount of data from case-control studies.</p> <p>24 Q (By Mr. Williams) On the question of whether or not the</p> <p>25 difference between case-control and cohort studies may be</p>
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<p>1 have-- even with small relative risk you will have a</p> <p>2 statistically significant result, an amount, that you</p> <p>3 would correct on speculating what would be seen with this</p> <p>4 particular data set.</p> <p>5 Q (By Mr. Williams) Let me ask you to focus on Page 7 of</p> <p>6 the exhibit and Figure No. 2, again, and the cohort</p> <p>7 studies for Exhibit No. 16A, the Berge study.</p> <p>8 You see there's a subtotal there for the cohort</p> <p>9 studies at the bottom of the table, right?</p> <p>10 A Yes.</p> <p>11 Q The combined relative risk for the cohort studies is</p> <p>12 1.02, no statistical significance, correct?</p> <p>13 A Correct.</p> <p>14 Q The confidence interval combined for those was 0.85 to</p> <p>15 1.20, correct?</p> <p>16 A Correct.</p> <p>17 Q If you had been basing your analysis on the cohort</p> <p>18 studies and not on an analysis of the case-control</p> <p>19 studies, you would not have been able to reach your</p> <p>20 conclusion that use of talc is a cause of ovarian cancer,</p> <p>21 true?</p> <p>22 MS. PARFITT: Objection; form,</p> <p>23 misstates the evidence.</p> <p>24 THE WITNESS: I looked at the totality</p> <p>25 of evidence and looked at all of the epidemiologic data</p>	<p>1 due to sample size and resulting low power, you come to</p> <p>2 the opposite conclusion as the authors of the Berge 2017</p> <p>3 study that you are relying upon, correct?</p> <p>4 MS. PARFITT: Objection; form,</p> <p>5 misstates her testimony.</p> <p>6 THE WITNESS: I am not sure why you</p> <p>7 come to that.</p> <p>8 I have the opposite conclusion.</p> <p>9 Q (By Mr. Williams) Well, the authors of the Berge study</p> <p>10 concluded that-- the authors of the Berge study concluded</p> <p>11 that low power of cohort studies cannot be invoked as an</p> <p>12 explanation of the heterogeneity of results, right?</p> <p>13 That's what they wrote?</p> <p>14 A That's what they wrote.</p> <p>15 Q On the question of whether or not the difference between</p> <p>16 case-control and cohort studies may be due to sample size</p> <p>17 and resulting low power, you come to the opposite</p> <p>18 conclusion as the authors of the Berge study, correct?</p> <p>19 MS. PARFITT: Objection; form.</p> <p>20 THE WITNESS: I don't remember coming</p> <p>21 to the opposite conclusion.</p> <p>22 I have opposite-- I have alternative reason why I</p> <p>23 think the cohort studies could have lower relative risk</p> <p>24 than the case-control studies, and-- which I've just</p> <p>25 stated about the way the exposures are collected.</p>

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<p style="text-align: right;">Page 226</p> <p>1 Q (By Mr. Williams) In your report, Dr. McTiernan, you</p> <p>2 dealt with the heterogeneity issue between the relative</p> <p>3 risk findings for case-controls versus the relative risk</p> <p>4 findings for cohorts.</p> <p>5 You dealt with that disparity by doing a power</p> <p>6 calculation and concluding that you needed 931 cases in</p> <p>7 order to have sufficient power.</p> <p>8 That's what you said, right?</p> <p>9 A A study-- I was talking about individual studies.</p> <p>10 I wasn't talking about the combined group of cohort</p> <p>11 studies.</p> <p>12 Q What the authors said on Page 6 of Exhibit No. 16A was,</p> <p>13 "Thus, low power of cohort studies cannot be invoked as</p> <p>14 an explanation of the heterogeneity of results."</p> <p>15 They said that, right?</p> <p>16 A Yes, and I think they mean the cohort studies combined.</p> <p>17 Q I'm sorry?</p> <p>18 A They're talking about the cohort studies combined.</p> <p>19 I'm talking about individual studies.</p> <p>20 Q And you disagree with that conclusion, true or not true?</p> <p>21 MS. PARFITT: Objection; form.</p> <p>22 THE WITNESS: I think that they're</p> <p>23 correct in what they're saying, that they had sufficient</p> <p>24 power to find a relative risk if it was there, if the</p> <p>25 study was done directly when they added those three</p>	<p style="text-align: right;">Page 228</p> <p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: You are talking about</p> <p>3 this-- yes.</p> <p>4 Q (By Mr. Williams) In your last answer or two answers</p> <p>5 ago, you referenced the fact that two of the cohort</p> <p>6 studies had relative risks above one.</p> <p>7 Do you remember saying that?</p> <p>8 A Yes.</p> <p>9 Q You are referring to Gates, which was 1.06, and Houghton,</p> <p>10 which is 1.12, correct?</p> <p>11 A Correct.</p> <p>12 Q The other relative risk was 0.73, correct?</p> <p>13 A Correct.</p> <p>14 Q If it had been statistically significant, that would show</p> <p>15 a protective effect from the use of talc, correct?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 THE WITNESS: Correct.</p> <p>18 Q (By Mr. Williams) Do you think that relative risks of</p> <p>19 1.06 and 1.12 are weak? strong? moderate?</p> <p>20 How would you characterize those numbers?</p> <p>21 MS. PARFITT: Objection; form.</p> <p>22 THE WITNESS: I tend to look at the</p> <p>23 number of what they are, rather than giving an adjective</p> <p>24 to it.</p> <p>25 I believe one possibility for these cohort studies</p>
<p style="text-align: right;">Page 227</p> <p>1 studies together, but I'm saying there were alternative</p> <p>2 reasons why the relative risk is lower, so there's two</p> <p>3 issues, the relative risk and the power and statistical</p> <p>4 significance, and the relative risk for two of those</p> <p>5 studies is over one.</p> <p>6 They used Gates-- Gertig had a little bit different</p> <p>7 level, but the data was collected in very different ways</p> <p>8 for cohort studies than case-control studies.</p> <p>9 Another problem with the cohort studies is that they</p> <p>10 did not follow the women for very long, on average, which</p> <p>11 was the case of 12 studies that have lifetime exposure,</p> <p>12 so the cohort studies may have not had all of the cases</p> <p>13 develop that were going to be developed, so there are</p> <p>14 reasons-- but it's two different reasons: the effect</p> <p>15 size, which is the relative risk, and the statistical</p> <p>16 significance, which is the P value or the confidence</p> <p>17 intervals.</p> <p>18 Q (By Mr. Williams) With respect to the issue of power,</p> <p>19 you said you needed to get to 931 cases, right?</p> <p>20 MS. PARFITT: Objection; form.</p> <p>21 THE WITNESS: I calculated 91-- 931</p> <p>22 for an individual study.</p> <p>23 Q (By Mr. Williams) And in these cases, if you combine the</p> <p>24 cohort studies, the total number of cases, they are far</p> <p>25 in excess of that number, right?</p>	<p style="text-align: right;">Page 229</p> <p>1 to have lower relative risk is because of the less</p> <p>2 accuracy in collecting the exposure.</p> <p>3 It tends to reduce the point estimate, which is the</p> <p>4 relative risk, if the exposure data is not collected with</p> <p>5 as much refinement as you can see in-- as we've seen in</p> <p>6 some of the other studies.</p> <p>7 Q (By Mr. Williams) Why would it reduce the number rather</p> <p>8 than raise the number?</p> <p>9 Couldn't it do either?</p> <p>10 A I am not sure exactly why, but it tends to do that-- by</p> <p>11 having incomplete information about an exposure, it tends</p> <p>12 to lower the relative risk.</p> <p>13 Q Can you point us to any treatise, any study, any analysis</p> <p>14 that makes that point?</p> <p>15 A Yes.</p> <p>16 Q That you just made?</p> <p>17 A Yes.</p> <p>18 Q Go ahead.</p> <p>19 A I have a reference.</p> <p>20 Q And then I promise we'll take a break.</p> <p>21 A Flegal, Brownie, and Haas, so Reference No. 45--</p> <p>22 Q And you are referring to Reference No. 45 from your</p> <p>23 report?</p> <p>24 A Yes, Reference No. 45.</p> <p>25 MS. PARFITT: Counsel, with your</p>

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<p style="text-align: right;">Page 230</p> <p>1 permission, I will hand her my--</p> <p>2 MR. WILLIAMS: Please.</p> <p>3 Q (By Mr. Williams) For the record, are you looking,</p> <p>4 Dr. McTiernan, to the portion of the Flegal, F-L-E-G-A-L,</p> <p>5 study, Item No. 45 on your reference list, to try to find</p> <p>6 something that supports your conclusion that a lack of--</p> <p>7 I can't remember how you put it, but a lack of sufficient</p> <p>8 questions in a cohort study leads to a lower risk ratio?</p> <p>9 A So I'll read from the abstract, the first two sentences,</p> <p>10 "In epidemiologic studies individuals may be</p> <p>11 misclassified with respect to exposure to a risk factor</p> <p>12 for disease.</p> <p>13 "Such misclassification causes the relative risk of</p> <p>14 disease associated with exposure in the population to be</p> <p>15 biased toward the null value."</p> <p>16 Q And what is it that you believe caused people-- strike</p> <p>17 that.</p> <p>18 I take it you conclude here that the cohort studies</p> <p>19 somehow misclassified some of the women who were</p> <p>20 participating in the study?</p> <p>21 A In the Nurses' Health Study women were asked in 1982, at</p> <p>22 one point, whether they used these products, and it was</p> <p>23 never updated, and it did not ask about their lifetime</p> <p>24 use before that.</p> <p>25 The Women's Health Initiative asked if they had ever</p>	<p style="text-align: right;">Page 232</p> <p>1 At the bottom of Page 28, the last sentence that</p> <p>2 carries over, you wrote, "It should be noted that ovarian</p> <p>3 talc particle burden may not be influenced by number of</p> <p>4 applications of perineal talc usage, and therefore the</p> <p>5 typical dose response relationship may not be necessary</p> <p>6 for establishing causality between perineal talcum powder</p> <p>7 product use and the risk for ovarian cancer."</p> <p>8 What's the basis for that statement?</p> <p>9 A I think I addressed that a little bit this morning, that</p> <p>10 if a woman is exposed to perineal talc and it moves up to</p> <p>11 the fallopian tube or ovarian area, all she would need is</p> <p>12 potentially one dose to then set up inflammation.</p> <p>13 The more that she's exposed to, that suggests the</p> <p>14 more likelihood of having the talc move up to that area,</p> <p>15 so we do look at dose responses to help support this</p> <p>16 association, but it still seems possible that a smaller</p> <p>17 number of doses could still increase risk.</p> <p>18 The reference that I used here, 64, Heller, do we</p> <p>19 have that available?</p> <p>20 (Exhibit No. 18 marked</p> <p>21 for identification.)</p> <p>22</p> <p>23 Q (By Mr. Williams) And we will mark the Heller study as</p> <p>24 Exhibit No. 18.</p> <p>25 If you could, just point me to the page that you're</p>
<p style="text-align: right;">Page 231</p> <p>1 used it when they entered the study, so that was between</p> <p>2 1992 and 1996.</p> <p>3 It was not updated either.</p> <p>4 It didn't have a full lifetime exposure collected,</p> <p>5 so really you only have one point in time for those two.</p> <p>6 One of them-- one of them asked about years of use</p> <p>7 and one asked about frequency, but neither asked about</p> <p>8 both.</p> <p>9 This is a typical underestimate of exposure when</p> <p>10 you're asking people just at one point in time and not</p> <p>11 updating and not going back in time.</p> <p>12 Q Anything else you want to add?</p> <p>13 A No.</p> <p>14 MR. WILLIAMS: Let's take a break.</p> <p>15 VIDEOGRAPHER: Going off the record,</p> <p>16 the time is 3:19 p.m.</p> <p>17 (Recess 3:19 to 3:39 p.m.)</p> <p>18</p> <p>19 VIDEOGRAPHER: We are back on the</p> <p>20 record. This is the start of Media 4. The time is 3:39</p> <p>21 p.m.</p> <p>22 Q (By Mr. Williams) Dr. McTiernan, do you have Exhibit</p> <p>23 No. 2 in front of you, your report?</p> <p>24 A Yes.</p> <p>25 Q Could you turn to Page 28.</p>	<p style="text-align: right;">Page 233</p> <p>1 referring to.</p> <p>2 A So, yes, if you look at-- just looking at Table No. 1,</p> <p>3 this is 12 women who reported talc use.</p> <p>4 You can see the talc counts weren't necessarily</p> <p>5 correlated with the lifetime talc applications, and this</p> <p>6 is estimated by a woman's report.</p> <p>7 So even women that have a smaller number of</p> <p>8 applications could have a very high talc count.</p> <p>9 Q Have you finished your answer?</p> <p>10 A Yes.</p> <p>11 Q Couldn't that very high talc count be as a result of the</p> <p>12 fact that talc is all over the environment, not just from</p> <p>13 talcum powder but from things we eat, places we go,</p> <p>14 contamination?</p> <p>15 Couldn't it be explained by that?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 THE WITNESS: It seems like a likely</p> <p>18 way for talc to be present in the ovaries is through</p> <p>19 movement up through the genital tract.</p> <p>20 There is some data suggesting that, yes, talc could</p> <p>21 migrate through the lymph system, but there's much more</p> <p>22 data showing that particles can move-- inert particles</p> <p>23 can move through the genital tract up through the</p> <p>24 fallopian tubes and to the ovaries in both animals and</p> <p>25 humans.</p>

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<p style="text-align: right;">Page 234</p> <p>1 Q (By Mr. Williams) Do you remember that the Heller study</p> <p>2 looked at groups of women that both used talcum powder in</p> <p>3 the perineal area and women who did not?</p> <p>4 A Yes. It was about half and half, and--</p> <p>5 Q Hold on. Let me ask the question.</p> <p>6 A Sorry.</p> <p>7 Q You do remember that it looked at both groups of women,</p> <p>8 those who used talc and those who did not, correct?</p> <p>9 A Yes.</p> <p>10 Q And then it looked at their ovaries to determine which</p> <p>11 ones had any evidence of talcum powder.</p> <p>12 Do you remember that?</p> <p>13 A Yes.</p> <p>14 Q And do you remember that the Heller study concluded that</p> <p>15 there were more women who had talcum powder in their</p> <p>16 ovaries who had never used talcum powder in the perineal</p> <p>17 area than there were women who had talc in their ovaries</p> <p>18 who had reported use of talcum powder in the perineal</p> <p>19 area?</p> <p>20 Do you recall that?</p> <p>21 MS. PARFITT: Objection.</p> <p>22 THE WITNESS: What I see in the table</p> <p>23 is a one point different, five versus six.</p> <p>24 They were able then to contact the mothers of these</p> <p>25 women to find out whether the women had been exposed as</p>	<p style="text-align: right;">Page 236</p> <p>1 their genital area that she didn't record, she didn't</p> <p>2 recall.</p> <p>3 Q You're speculating now, aren't you?</p> <p>4 MS. PARFITT: Objection.</p> <p>5 Q (By Mr. Williams) Are you not speculating right now?</p> <p>6 A I don't know. They don't have data saying that the woman</p> <p>7 misrepresented.</p> <p>8 Q What we do have data on is the ages of the women who had</p> <p>9 talc in their ovaries, correct?</p> <p>10 A Yes.</p> <p>11 Q And who were part of this study, right?</p> <p>12 A Yes.</p> <p>13 Q The notion that the fact that they were diapered as</p> <p>14 babies with talcum powder could be an explanation for how</p> <p>15 they had talc in their ovaries doesn't hold up, does it,</p> <p>16 if the ages of the women are, with two exceptions, people</p> <p>17 who are in their 60s and 50s and 40s, right?</p> <p>18 MS. PARFITT: Objection; form,</p> <p>19 misstates the data.</p> <p>20 THE WITNESS: I don't know if we have</p> <p>21 data that can show that, but if talc has migrated up and</p> <p>22 is in the peritoneal area, it sits there. I don't know</p> <p>23 how it would be removed.</p> <p>24 It doesn't seem implausible to me that it could</p> <p>25 remain there for years.</p>
<p style="text-align: right;">Page 235</p> <p>1 babies, if they had been diapered with talc, and you</p> <p>2 could see quite a few-- three additional that did have</p> <p>3 genital exposure from talc use as babies.</p> <p>4 Q (By Mr. Williams) Dr. McTiernan, what is the latency</p> <p>5 period for ovarian cancer?</p> <p>6 A It's decades, so it's thought to be-- it could be 30, 40</p> <p>7 years.</p> <p>8 Q Isn't it 20 or 30 years?</p> <p>9 MS. PARFITT: Objection; form.</p> <p>10 THE WITNESS: It's not clear if it's</p> <p>11 exactly that, but it could be much longer.</p> <p>12 Q (By Mr. Williams) Well, take a look at the ages of the</p> <p>13 women in Table No. 2.</p> <p>14 Do you see those ages?</p> <p>15 Wouldn't those women have had to have been diapered</p> <p>16 in their 30s and 40s, by your analysis?</p> <p>17 A No, I see one woman is 59, so that would have been a long</p> <p>18 period.</p> <p>19 One is 40.</p> <p>20 One is 64.</p> <p>21 Q If a woman were 59 and the latency period were 40 years,</p> <p>22 that would mean that she would have had to have been</p> <p>23 diapered when she was 19, right?</p> <p>24 A The latency could have been longer in some.</p> <p>25 There's also a possibility of other exposure to</p>	<p style="text-align: right;">Page 237</p> <p>1 Q (By Mr. Williams) Do you have any opinion on how long</p> <p>2 talc particles stay in a woman's ovary, assuming it can</p> <p>3 get to an ovary?</p> <p>4 A I have no data to show me one way or the other.</p> <p>5 Q What we do know from the Heller study though is in Table</p> <p>6 No. 3 for those women who reported talc use, five of the</p> <p>7 12 had talc in their ovary, correct?</p> <p>8 A That's correct.</p> <p>9 Q And six of the women, who reported no talc use, six of</p> <p>10 the 12 had talc in their ovaries, correct?</p> <p>11 A That's correct.</p> <p>12 Q Now, you cited Heller as a basis for-- strike that.</p> <p>13 You criticized the cohort studies earlier today for</p> <p>14 asking only at one point in time whether women used</p> <p>15 talcum powder.</p> <p>16 Do you recall that testimony?</p> <p>17 A Yes, in the sense that it may underreport by asking about</p> <p>18 one period in time.</p> <p>19 Q But you also just testified a few moments ago and you</p> <p>20 testified earlier today that one-time exposure is</p> <p>21 sufficient to support the conclusion that talc causes</p> <p>22 ovarian cancer, right?</p> <p>23 A I don't recall saying that, and I did say that-- I</p> <p>24 thought I just said that the women may not have</p> <p>25 remembered using it.</p>

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<p style="text-align: right;">Page 238</p> <p>1 The ones that said they didn't, they may have not</p> <p>2 remembered, and that is underreporting.</p> <p>3 Q But wouldn't asking the question whether-- one time</p> <p>4 whether a woman ever used talcum powder be enough to give</p> <p>5 the cohort studies the ability to analyze whether there</p> <p>6 was an overall statistically significant association, if</p> <p>7 in fact one existed, given your testimony that all it</p> <p>8 takes is one exposure?</p> <p>9 A I think-- sorry, are you talking about my testimony of</p> <p>10 one exposure in order to cause ovarian cancer?</p> <p>11 Q Yes.</p> <p>12 A There may be other reasons women could say it could not</p> <p>13 report use of talc-- they may not remember it.</p> <p>14 They may not feel comfortable reporting it.</p> <p>15 In these cohort studies there were some subjects</p> <p>16 that were not included because they didn't report use.</p> <p>17 One of the cohort studies didn't include about 500</p> <p>18 women because they didn't have information, they didn't</p> <p>19 answer the question.</p> <p>20 Q You are speculating now, aren't you?</p> <p>21 MS. PARFITT: Objection; form.</p> <p>22 THE WITNESS: We can look at the</p> <p>23 cohort studies to see what the numbers were that didn't</p> <p>24 remember.</p> <p>25 Q (By Mr. Williams) Is it your testimony that use of--</p>	<p style="text-align: right;">Page 240</p> <p>1 THE WITNESS: I would have to look at</p> <p>2 the question again, but they were asked at one point if</p> <p>3 they were using, and--</p> <p>4 Q (By Mr. Williams) Weren't they asked in some of the</p> <p>5 cohort studies whether they ever used talcum powder?</p> <p>6 A One of them did and one didn't, so I would have to look</p> <p>7 back.</p> <p>8 Q Regardless of which one is which, which one said, "Look</p> <p>9 back" or which one side, "Are you currently using," isn't</p> <p>10 the point that if talcum powder use in the perineal area</p> <p>11 is a habitual thing that women did and do after</p> <p>12 showering, after exercising-- after being out in the</p> <p>13 world, if they're hot, if it is something that is</p> <p>14 habitually done, then is there any reason to believe that</p> <p>15 when a woman reports that she has used talcum powder,</p> <p>16 that she's only done it one time?</p> <p>17 MS. PARFITT: Objection; form.</p> <p>18 THE WITNESS: I don't know the answer</p> <p>19 to that. I haven't seen the data.</p> <p>20 Q (By Mr. Williams) Earlier today you were asked questions</p> <p>21 about cohort study methodology, and I believe you said</p> <p>22 that one of the problems with the cohort studies is that</p> <p>23 they ask about a lot of substances and not just talcum</p> <p>24 powder.</p> <p>25 Do you recall saying that?</p>
<p style="text-align: right;">Page 239</p> <p>1 strike that.</p> <p>2 Do you have an understanding, as you sit there, as</p> <p>3 to whether or not use of talcum powder in the perineal</p> <p>4 area is a habitual activity or something that is done</p> <p>5 once and never again?</p> <p>6 A I don't think we have data showing one way or the other.</p> <p>7 Q Do you believe that there are no studies that talk at all</p> <p>8 about whether or not this is a habit, the use-- and by</p> <p>9 "this," I mean the use of talcum powder in the perineal</p> <p>10 area?</p> <p>11 A I didn't review that.</p> <p>12 The studies talked about what proportion of people</p> <p>13 were using talc at the time that they were interviewed.</p> <p>14 I noticed the Women's Health Initiative is 40</p> <p>15 percent were using it. I think Nurses' Health Study was</p> <p>16 about 50 percent using it, whereas the sister study, a</p> <p>17 very small percent, they were interviewed more recently</p> <p>18 or they answered questions more recently.</p> <p>19 I don't recall the studies determining whether</p> <p>20 somebody had used it once versus several times or a</p> <p>21 habitual use versus nonhabitual use.</p> <p>22 Q So the cohort studies that started in 1982, is it your</p> <p>23 testimony that those women started using talcum powder in</p> <p>24 1982?</p> <p>25 MS. PARFITT: Objection.</p>	<p style="text-align: right;">Page 241</p> <p>1 A Yes.</p> <p>2 Q And isn't it true-- strike that.</p> <p>3 Isn't it true that a number of the cohort studies</p> <p>4 ask about multiple substance-- strike that.</p> <p>5 Isn't it true that a number of the case-control</p> <p>6 studies ask about a number of substances?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 THE WITNESS: Without having the</p> <p>9 questionnaires for all of the case-control studies, I</p> <p>10 can't answer about exactly what they asked about other</p> <p>11 variables.</p> <p>12 Certainly case-control studies, many of the ones</p> <p>13 included, asked about several different potential</p> <p>14 exposures in relation to ovarian cancer.</p> <p>15 They were designed to look at ovarian cancer.</p> <p>16 The cohort studies, however, were designed to look</p> <p>17 at exposures related to cardiovascular disease, various</p> <p>18 cancers, osteoporosis, arthritis, cognition, so there are</p> <p>19 many, many different forms that these women filled out,</p> <p>20 and the Women's Health Initiative in the cohort study,</p> <p>21 they were completing forms every year with different</p> <p>22 types of information collected.</p> <p>23 At baseline, which is the only time when talc was</p> <p>24 collected, they had multiple forms that they had to</p> <p>25 complete.</p>

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<p>1 Q (By Mr. Williams) What is it about asking about multiple</p> <p>2 substances and not just talcum powder that makes that</p> <p>3 practice in some cohort studies unreliable, in your view?</p> <p>4 A It could make it unreliable, but it certainly is fatigue,</p> <p>5 how many questions can somebody answer accurately.</p> <p>6 The cohort studies were self-administered forms, so</p> <p>7 the woman had no prompting, no additional help with</p> <p>8 remembering.</p> <p>9 The two studies that I could find, the actual</p> <p>10 questionnaire, the Nurses' Health Study and the Women's</p> <p>11 Health Initiative, they're very short and simple</p> <p>12 questions without going through any information about</p> <p>13 what they might have been doing at different time points</p> <p>14 in their life.</p> <p>15 The Nurses' Health Study had one little question</p> <p>16 about five categories to fill in, so something that's</p> <p>17 that short can underestimate the level of exposure.</p> <p>18 Q Does being fatigued make a woman check the box saying</p> <p>19 that she used talc or does it make her not check the box</p> <p>20 saying that she used talc?</p> <p>21 A I don't know.</p> <p>22 Q Then what does fatigue have to do with it?</p> <p>23 A If it makes the result less accurate, whichever way it</p> <p>24 goes, the misclassification, as we just talked about,</p> <p>25 that then can drive the relative risk lower towards the</p>	<p>1 not all statistically significant, right?</p> <p>2 MS. PARFITT: Objection; form,</p> <p>3 misstates her testimony.</p> <p>4 THE WITNESS: When you look at studies</p> <p>5 that were small, the smaller, older studies tended to be</p> <p>6 less likely to have statistical significance, and the</p> <p>7 newer, larger studies were more likely to be</p> <p>8 statistically significant.</p> <p>9 Q (By Mr. Williams) You agree that simply combining data</p> <p>10 into meta or pooled analyses does not entirely eliminate</p> <p>11 the underlying flaws of the individual studies, true?</p> <p>12 A Yes, when you combine data, then the individual study's</p> <p>13 data still stand.</p> <p>14 What you're doing by combining data is smoothing out</p> <p>15 variability across studies and increasing sample size.</p> <p>16 Q Take a look at the Berge study, 16A, that we were looking</p> <p>17 at earlier, and take a look at Figure No. 2.</p> <p>18 That's the Forest plot, right?</p> <p>19 A Yes.</p> <p>20 Q This breaks out the case-control and the cohort studies</p> <p>21 analyzed for the meta-analysis, right?</p> <p>22 A Yes.</p> <p>23 Q There's a combined relative risk for the case-controls</p> <p>24 and the cohort combined, and that is the 1.22 indicated</p> <p>25 at the bottom of the table, right?</p>
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<p>1 null.</p> <p>2 Q But it also can drive it higher, right, depending on</p> <p>3 which way it goes?</p> <p>4 MS. PARFITT: Objection; form.</p> <p>5 THE WITNESS: Not usually from this</p> <p>6 classification. It usually drives it towards the null.</p> <p>7 Q (By Mr. Williams) Your opinion that perineal talc use</p> <p>8 can cause ovarian cancer is based on what you describe as</p> <p>9 a statistically significant elevated risk, right?</p> <p>10 A That's correct, overall, looking at the meta-analysis and</p> <p>11 the pooled analysis.</p> <p>12 Q And that statistically significant elevated risk estimate</p> <p>13 is in combined data in the meta-analysis, correct?</p> <p>14 A Correct, adding the studies together.</p> <p>15 Q By combining the data, you are referring to meta-analyses</p> <p>16 and pooled analyses, right?</p> <p>17 A Yes.</p> <p>18 Q Your opinion of that combined data is based upon</p> <p>19 statistical significance, correct?</p> <p>20 A Partly. It's based also on consistency across the</p> <p>21 individual studies and also the effect size consistently</p> <p>22 being elevated in most of the studies.</p> <p>23 Q You do agree that when you do not combine the data,</p> <p>24 meaning when you look at the individual sourced studies</p> <p>25 from which the meta-analyses are performed, the data is</p>	<p>1 A That's correct.</p> <p>2 MR. LOCKE: Excuse me, can we just</p> <p>3 take a quick break?</p> <p>4 VIDEOGRAPHER: Going off the record,</p> <p>5 the time is 3:59 p.m. Please stand by.</p> <p>6 (Recess 3:59 to 4:00 p.m.)</p> <p>7</p> <p>8 VIDEOGRAPHER: We are back on the</p> <p>9 record. The time is 4 p.m.</p> <p>10 Q (By Mr. Williams) Dr. McTiernan, do you have the Berge</p> <p>11 study, Exhibit No. 16A, in front of you?</p> <p>12 A Yes.</p> <p>13 Q And you are looking at the Forest plot?</p> <p>14 A Yes.</p> <p>15 Q I would like to focus you on the case-control studies.</p> <p>16 I have counted the total number there.</p> <p>17 I count 24 total.</p> <p>18 Is that what you count?</p> <p>19 A Yes.</p> <p>20 Q If we look at those studies that have a confidence</p> <p>21 interval that crosses over 1.0, there are 12 of them,</p> <p>22 correct?</p> <p>23 A Yes, the earlier studies do.</p> <p>24 Q And that means that there are 12 that are not</p> <p>25 statistically significant, correct?</p>

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<p style="text-align: right;">Page 246</p> <p>1 A Yes.</p> <p>2 Q So as between just the case-control studies, the 24</p> <p>3 listed here, at best only 50 percent of them or 12 of</p> <p>4 them reflect a statistically significant association,</p> <p>5 true?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 THE WITNESS: And, again, that's</p> <p>8 largely based on sample size.</p> <p>9 The earlier studies tended to be smaller than the</p> <p>10 older ones-- sorry, than the more recent ones, which the</p> <p>11 sample size drives statistical significance.</p> <p>12 Q (By Mr. Williams) It is accurate that 12 of the</p> <p>13 case-control studies did not find a statistically</p> <p>14 significant association, true or not true?</p> <p>15 MS. PARFITT: Objection; form, asked</p> <p>16 and answered.</p> <p>17 THE WITNESS: The sample size drives</p> <p>18 the statistical significance, and the larger, more recent</p> <p>19 studies, were more likely to be statistically</p> <p>20 significant.</p> <p>21 The smaller, older studies, were more likely to be</p> <p>22 not statistically significant.</p> <p>23 Q (By Mr. Williams) The combined risk estimate for the 24</p> <p>24 case-control studies came out to a statistically</p> <p>25 significant number, correct?</p>	<p style="text-align: right;">Page 248</p> <p>1 significant?</p> <p>2 MS. PARFITT: Objection; form, asked</p> <p>3 and answered.</p> <p>4 Q (By Mr. Williams) Am I right?</p> <p>5 A My response is that they showed different results, not</p> <p>6 just the statistical significance being different, but</p> <p>7 the point estimate is different.</p> <p>8 Q Let me put it this way:</p> <p>9 On the question of statistical significance, yes or</p> <p>10 no, are the results-- the combined results of the</p> <p>11 case-controls consistent with the combined results on the</p> <p>12 cohort studies or not, yes or no?</p> <p>13 MS. PARFITT: Objection; form, asked</p> <p>14 and answered.</p> <p>15 THE WITNESS: So I think I answered</p> <p>16 before, the statistical significance was different and</p> <p>17 they showed different results.</p> <p>18 Q (By Mr. Williams) And the different results that they</p> <p>19 showed was that one, the cohorts, was not statistically</p> <p>20 significant, and the case-controls, overall, were</p> <p>21 statistically significant, correct?</p> <p>22 MS. PARFITT: Objection; form, asked</p> <p>23 and answered multiple times.</p> <p>24 THE WITNESS: So I answered more</p> <p>25 fully, I think, than just statistical significance.</p>
<p style="text-align: right;">Page 247</p> <p>1 A That's correct.</p> <p>2 Q The combined risk estimate for the cohort studies, on the</p> <p>3 other hand, did not come out to a statistically</p> <p>4 significant number, right?</p> <p>5 A That's correct.</p> <p>6 Q Can we agree that on the question of statistical</p> <p>7 significance, the combined risk estimate for the</p> <p>8 case-control studies are not consistent with the combined</p> <p>9 risk estimate for the cohort studies?</p> <p>10 MS. PARFITT: Objection; form, asked</p> <p>11 and answered, misstates her prior testimony.</p> <p>12 You may answer.</p> <p>13 THE WITNESS: The combined cohort</p> <p>14 study not only was not significant, the relative risk was</p> <p>15 1.02.</p> <p>16 Q (By Mr. Williams) I don't believe you answered my</p> <p>17 question.</p> <p>18 My question is:</p> <p>19 Can we agree that a question of statistical</p> <p>20 significance, just that question, the combined risk</p> <p>21 estimate for the case-control studies are not consistent</p> <p>22 with the combined risk estimate for the cohort studies</p> <p>23 because for the cohort studies the result was not</p> <p>24 statistically significant, and for the case-control</p> <p>25 studies the combined estimate was statistically</p>	<p style="text-align: right;">Page 249</p> <p>1 I answered both about the relative risk, which is</p> <p>2 the point estimate, and the statistical significance, so</p> <p>3 the point estimate was 1.02 in the cohort studies, not</p> <p>4 statistically significant.</p> <p>5 It was 1.26 in the case-control studies, and that</p> <p>6 was statistically significant.</p> <p>7 Q (By Mr. Williams) Perhaps that's where the issue is.</p> <p>8 For purposes of my question, I am asking you to</p> <p>9 limit your analysis to the question of statistical</p> <p>10 significance.</p> <p>11 Are you with me so far?</p> <p>12 A I understand what you're saying.</p> <p>13 Q With respect to statistical significance, with respect to</p> <p>14 that issue, is it your testimony that the case-control</p> <p>15 studies, which find that there is a statistically</p> <p>16 significant positive odds ratio or relative risk, and the</p> <p>17 cohort studies, which do not collectively have a positive</p> <p>18 relative risk, is it your testimony that those are</p> <p>19 consistent with respect to the issue of statistical</p> <p>20 significance?</p> <p>21 MS. PARFITT: Objection; form, asked</p> <p>22 and answered, hopefully for the last time.</p> <p>23 THE WITNESS: And I think I don't look</p> <p>24 at statistical significance in the same way for a</p> <p>25 relative risk of 1.02 as I do for 1.26, but there is</p>

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<p style="text-align: right;">Page 250</p> <p>1 something remarkable here, is that the upper limit of the</p> <p>2 confidence interval for the cohort studies is almost up</p> <p>3 to the relative risk for the case-control studies, so the</p> <p>4 statistical significance test tells us the relative risk</p> <p>5 could be as high as 1.2, so even though you call it</p> <p>6 nonstatistically significant, it's still within 95</p> <p>7 percent chance that it's up at 1.2.</p> <p>8 Q (By Mr. Williams) Are they both statistically</p> <p>9 significant or not, the case-controls or the-- and the</p> <p>10 cohort studies?</p> <p>11 MS. PARFITT: Objection; form, asked</p> <p>12 and answered.</p> <p>13 Counsel, I do believe she is trying to answer the</p> <p>14 question.</p> <p>15 This is about the tenth time.</p> <p>16 Q (By Mr. Williams) You may answer.</p> <p>17 MS. PARFITT: Give your response</p> <p>18 again.</p> <p>19 THE WITNESS: I think I'm sorry, but I</p> <p>20 don't think of something as just looking at the</p> <p>21 statistical significance.</p> <p>22 I always look at both the relative risk and the</p> <p>23 statistical significance.</p> <p>24 Repeating, the relative risk is only 1.2 for the</p> <p>25 cohort studies.</p>	<p style="text-align: right;">Page 252</p> <p>1 Just so we can remember, my question to you is:</p> <p>2 Are you unable to answer my question because I am</p> <p>3 limiting the question to talk about statistical</p> <p>4 significance and whether those findings are consistent or</p> <p>5 inconsistent?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 Answer his question.</p> <p>8 You have answered multiple times.</p> <p>9 THE WITNESS: I think my answer is I</p> <p>10 don't look at just statistical significance. I look at</p> <p>11 point estimate as well.</p> <p>12 Q (By Mr. Williams) Are you an expert in asbestos?</p> <p>13 A No, I'm not an expert in asbestos.</p> <p>14 Q Are you an expert in geology?</p> <p>15 A No.</p> <p>16 Q Mineralogy?</p> <p>17 A No.</p> <p>18 Q Can you distinguish between an asbestiform fiber on the</p> <p>19 one hand and a cleavage fragment on the other?</p> <p>20 A No.</p> <p>21 Q Can you distinguish between an asbestiform and a</p> <p>22 nonasbestiform fiber?</p> <p>23 A No.</p> <p>24 Q Are you an expert in microscopy?</p> <p>25 A In which?</p>
<p style="text-align: right;">Page 251</p> <p>1 The confidence interval includes one, so that would</p> <p>2 be considered not statistically significant, but it</p> <p>3 ranges up to 1.2, which means the relative risk could be</p> <p>4 as high as 1.2 for the cohort studies.</p> <p>5 Q (By Mr. Williams) You're speculating; are you not?</p> <p>6 MS. PARFITT: Objection; form.</p> <p>7 THE WITNESS: I'm interpreting--</p> <p>8 MS. PARFITT: Misstates your</p> <p>9 testimony.</p> <p>10 THE WITNESS: I am interpreting what</p> <p>11 the 95 percent confidence intervals mean.</p> <p>12 It's not a speculation.</p> <p>13 Q (By Mr. Williams) Is the answer that you are not able to</p> <p>14 answer my question as phrased when I limit the question</p> <p>15 to an analysis of statistical significance?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 She has answered your question completely.</p> <p>18 Let's move on, Mr. Williams.</p> <p>19 You are not going to get a different answer.</p> <p>20 You can use up the remaining of your time if you</p> <p>21 would like, but she has answered the question.</p> <p>22 Q (By Mr. Williams) You may answer, Doctor.</p> <p>23 MS. PARFITT: You are asking questions</p> <p>24 10, 15 times--</p> <p>25 Q (By Mr. Williams) You may answer.</p>	<p style="text-align: right;">Page 253</p> <p>1 Q Microscopy.</p> <p>2 A No.</p> <p>3 Q Are you qualified to analyze bulk samples of baby powder</p> <p>4 using different types of microscopes?</p> <p>5 A No, I'm not.</p> <p>6 Q Are you qualified to perform any of the following tests</p> <p>7 for purposes of analyzing a talcum powder sample:</p> <p>8 X-ray defraction?</p> <p>9 A Are you going to list them or do you want me to say</p> <p>10 "no"--</p> <p>11 Q You can answer them one at a time.</p> <p>12 A No.</p> <p>13 Q Polarized light microscopy?</p> <p>14 A No.</p> <p>15 Q Transmission electron microscopy?</p> <p>16 A No.</p> <p>17 Q In your work do you review and analyze other people's</p> <p>18 defraction patterns or readouts or images or other</p> <p>19 results of microscopic testing for-- of talcum powder for</p> <p>20 asbestos, the presence of asbestos?</p> <p>21 A Are you talking about looking at the details of their</p> <p>22 sampling?</p> <p>23 Q Correct.</p> <p>24 A To determine the methods? No, I would not do that.</p> <p>25 Q Regardless of the method, have you ever personally tested</p>

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<p>1 any talcum powder product for asbestos?</p> <p>2 A No.</p> <p>3 Q Have you ever been to a talc mine?</p> <p>4 A No.</p> <p>5 Q How about a talc mill?</p> <p>6 A No.</p> <p>7 Q Do you know how talc is selected from a mine, sorted,</p> <p>8 sterilized, processed before it is ever put into a bottle</p> <p>9 of Johnson's Baby Powder?</p> <p>10 A No, I don't.</p> <p>11 Q Do you know what methods are used to test the cosmetic</p> <p>12 talc in Johnson's Baby Powder products for asbestos?</p> <p>13 A Are you talking about what your company methods are to</p> <p>14 test?</p> <p>15 Q Whether it was the company's methods or someone else's--</p> <p>16 A No.</p> <p>17 Q Do you know how many methods were used over the years to</p> <p>18 test cosmetic talc in Johnson's Baby Powder products for</p> <p>19 asbestos?</p> <p>20 A In some of the documents I've reviewed, I have seen</p> <p>21 mention of several types, but I couldn't-- I am not an</p> <p>22 expert in them.</p> <p>23 Q Do you know how often cosmetic talc, in Johnson's Baby</p> <p>24 Powder products, were tested for asbestos?</p> <p>25 A By anybody, I don't know.</p>	<p>1 2014 have shown that present-day talcum powder products</p> <p>2 include several types of asbestos, and you cite two</p> <p>3 sources, right?</p> <p>4 A Yes.</p> <p>5 Q And those are Gordon 2014 and Blount 1991?</p> <p>6 A That's correct.</p> <p>7 Q You also cite to Exhibit No. 47 of the deposition of</p> <p>8 Imerys witness Julie Pier, P-I-E-R.</p> <p>9 Do you remember that?</p> <p>10 A Yes.</p> <p>11 Q And to Exhibit No. 24 to the deposition of Johnson &</p> <p>12 Johnson witness John Hopkins, correct?</p> <p>13 A Yes.</p> <p>14 Q You also have cited to five litigation reports. Those</p> <p>15 are referenced as 79 to 83, which were prepared by</p> <p>16 Dr. William Longo, right?</p> <p>17 A Yes.</p> <p>18 Q Are you in fact relying upon Gordon 2014, Blount 1991,</p> <p>19 Pier Exhibit No. 47, Hopkins Exhibit No. 24, and the five</p> <p>20 Longo reports for your opinion that asbestos has been</p> <p>21 found specifically in Johnson's Baby Powder products?</p> <p>22 A I would have to look at Gordon again to see what that</p> <p>23 said about Johnson & Johnson.</p> <p>24 Blount did identify one of the components as baby</p> <p>25 powder.</p>
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<p>1 Q Is it your opinion that at one point in time or another,</p> <p>2 Johnson's Baby Powder products contained asbestos?</p> <p>3 I think you told us you believe that's true,</p> <p>4 correct?</p> <p>5 A Yes, that is my opinion.</p> <p>6 Q I will rephrase.</p> <p>7 Is it your opinion that Johnson's Baby Powder</p> <p>8 products sold today contain asbestos?</p> <p>9 MS. PARFITT: Objection; form, asked</p> <p>10 and answered.</p> <p>11 THE WITNESS: I believe from the</p> <p>12 evidence I've seen, that there was asbestos as recently</p> <p>13 as samples tested in the 2000s.</p> <p>14 I don't know for 2019.</p> <p>15 I haven't seen any reports on that.</p> <p>16 Q (By Mr. Williams) And am I right-- if you take a look at</p> <p>17 Page 57 of your report, Exhibit No. 2, and I'm referring</p> <p>18 you to the bottom of the page, the last paragraph, does</p> <p>19 that paragraph summarize your opinion that asbestos has</p> <p>20 been found in Johnson's Baby Powder products</p> <p>21 specifically?</p> <p>22 A So are you talking about the whole paragraph?</p> <p>23 Q Correct.</p> <p>24 You mention Reference No. 75 and Reference No. 76 as</p> <p>25 supporting the idea that published data as recently as</p>	<p>1 Pier and Hopkins were Johnson & Johnson products,</p> <p>2 and Longo tested products from-- my understanding from</p> <p>3 the report, from Johnson & Johnson.</p> <p>4 Q Other than the materials that we just identified, are you</p> <p>5 relying on anything else to support your opinion that</p> <p>6 asbestos has been found specifically in Johnson's Baby</p> <p>7 Powder products?</p> <p>8 A No.</p> <p>9 Q "No," you are not relying on anything else?</p> <p>10 A No, I'm not.</p> <p>11 Q Are you aware that at the time they authored the article</p> <p>12 identified as Reference No. 75 -- that's the Gordon 2014</p> <p>13 report -- that each of the three authors had been a paid</p> <p>14 expert for the plaintiffs' lawyers in talcum powder</p> <p>15 litigation?</p> <p>16 A I believe they said that in their disclosures.</p> <p>17 Do we have 75 available?</p> <p>18 Q While they are looking for that, Doctor, do you recall</p> <p>19 whether they identified in the Gordon 2014 article, and</p> <p>20 by "they," I mean the authors, did they identify whether</p> <p>21 they were plaintiff experts; that is, experts retained by</p> <p>22 plaintiffs in litigation.</p> <p>23 A It says, "Attorneys for the litigation process."</p> <p>24 Q It does not say whether it's Plaintiff or Defendant,</p> <p>25 correct?</p>

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<p style="text-align: right;">Page 258</p> <p>1 A I don't see it here--</p> <p>2 Q I'm sorry, what was--</p> <p>3 A It doesn't say for the plaintiff or the defense. It</p> <p>4 doesn't say which.</p> <p>5 Q Do you know, one way or the other, whether the product</p> <p>6 tested in that article was Johnson's Baby Powder?</p> <p>7 A No, I can't recall if I saw it.</p> <p>8 My paragraph didn't talk about Johnson & Johnson,</p> <p>9 just talked about talcum powder products.</p> <p>10 Q Okay. Let me ask you to assume, for purposes of my next</p> <p>11 question, that the product that is referred to in the</p> <p>12 Gordon article was not Johnson's Baby Powder.</p> <p>13 Will you make that assumption for purposes only of</p> <p>14 my question?</p> <p>15 A Okay.</p> <p>16 Q Okay. How would an article about a different talcum</p> <p>17 powder product than the ones that are at issue in this</p> <p>18 case support your opinion that perineal use of Johnson's</p> <p>19 Baby Powder products cause ovarian cancer?</p> <p>20 MS. PARFITT: Objection; form.</p> <p>21 THE WITNESS: My opinion was-- from my</p> <p>22 report, my opinion was that talcum powder product use of</p> <p>23 any source increases risk of ovarian cancer.</p> <p>24 Q (By Mr. Williams) Okay. With respect to the Blount</p> <p>25 article, 1991, Reference No. 76 in your report is the</p>	<p style="text-align: right;">Page 260</p> <p>1 Q Let me ask you about John Hopkins.</p> <p>2 You referenced having read some documents that bore</p> <p>3 his name, correct?</p> <p>4 A Yes.</p> <p>5 Q Let's mark as Exhibit No. 19 a document that I believe</p> <p>6 was Reference No. 78 in your report.</p> <p>7 (Exhibit No. 19 marked</p> <p>8 for identification.)</p> <p>9</p> <p>10 Q (By Mr. Williams) Do you recognize this as the document</p> <p>11 in your report that you cited in support of your opinion</p> <p>12 that talcum powder products contained asbestos?</p> <p>13 A Yes.</p> <p>14 Q It is Exhibit No. 24, you see there, with the little tab,</p> <p>15 to John Hopkins' August 17, 2018 deposition, correct?</p> <p>16 A Okay. Here it says "19."</p> <p>17 Q What says 19?</p> <p>18 A I have Exhibit No. 19 for this one, 24 for the--</p> <p>19 Q Correct.</p> <p>20 Just so you know, for this deposition it's Exhibit</p> <p>21 No. 19.</p> <p>22 For Mr. Hopkins' deposition it was Exhibit No. 24.</p> <p>23 Do you understand?</p> <p>24 A Yes.</p> <p>25 Q Is this one of the documents that Plaintiffs' counsel</p>
<p style="text-align: right;">Page 259</p> <p>1 article by author A.M. Blount.</p> <p>2 Do you recall that?</p> <p>3 A Yes.</p> <p>4 Q What information from the Blount 1991 article are you</p> <p>5 relying on for your opinion that the contaminated</p> <p>6 products mentioned in that article refer to Johnson's</p> <p>7 Baby Powder products?</p> <p>8 A So there was a table with unidentified samples labelled A</p> <p>9 to O, and I is indicated as-- somewhere it's written as</p> <p>10 baby powder, I believe.</p> <p>11 Then from litigation there was some indication of</p> <p>12 what these different samples were, and so that one was</p> <p>13 identified as Johnson & Johnson Baby Powder.</p> <p>14 Q Did you review the entirety of Dr. Blount's deposition?</p> <p>15 A No. I skimmed part of it. I didn't review-- I skimmed</p> <p>16 part of it. I didn't read the total deposition.</p> <p>17 Q Did you read the part of the deposition where Dr. Blount</p> <p>18 testified that the bottle of Johnson's Baby Powder that</p> <p>19 she brought to the deposition could not possibly be the</p> <p>20 bottle of talc that she identified as Sample No. 1 in her</p> <p>21 1991 article?</p> <p>22 A You mean Sample 1 or Sample I?</p> <p>23 Q Sample I, thank you.</p> <p>24 It's Roman I or I.</p> <p>25 A I didn't read that, no.</p>	<p style="text-align: right;">Page 261</p> <p>1 sent to you without your asking?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: They did send it to me.</p> <p>4 I don't recall if I asked for it or not.</p> <p>5 Q (By Mr. Williams) Do you have any idea if the three</p> <p>6 pages of testing contained in Mr. Hopkins' Exhibit No. 24</p> <p>7 is representative of all the testing that was done on</p> <p>8 Johnson & Johnson talcum powder products?</p> <p>9 A I don't, but I would be concerned about any bottles</p> <p>10 having asbestos in them.</p> <p>11 Q Do you have a problem with the notion that the seller of</p> <p>12 talcum powder products tests for asbestos?</p> <p>13 MS. PARFITT: Objection; form.</p> <p>14 THE WITNESS: Do I have a problem with</p> <p>15 the notion that the seller tests--</p> <p>16 Q (By Mr. Williams) I'll rephrase it.</p> <p>17 A No, I don't have a problem.</p> <p>18 Q And the reason you don't have a problem is that the</p> <p>19 seller of a product could, in all good faith, seek to</p> <p>20 determine whether or not a particular mine where they're</p> <p>21 getting the product contains asbestos, right?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: Okay.</p> <p>24 Q (By Mr. Williams) So the mere fact-- what I'm getting at</p> <p>25 is:</p>

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<p style="text-align: right;">Page 262</p> <p>1 The mere fact that a company tests to determine</p> <p>2 whether or not there is asbestos, for example, in a mine</p> <p>3 where they are mining for talcum powder, that fact, in</p> <p>4 and of itself, is not repugnant to you in any way,</p> <p>5 correct?</p> <p>6 A No.</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 Q (By Mr. Williams) It is not repugnant to you, for</p> <p>9 example, for a car company to test whether cars of a</p> <p>10 particular make and model have brakes that work, right?</p> <p>11 A Correct.</p> <p>12 Q The fact that they test for brakes does not mean that the</p> <p>13 brakes do not work, right?</p> <p>14 A Correct.</p> <p>15 Q The fact that they test for brakes doesn't mean that the</p> <p>16 product that is actually sold to people does not have</p> <p>17 brakes that can stop a car, right?</p> <p>18 MS. PARFITT: Objection; form.</p> <p>19 THE WITNESS: There are a couple of</p> <p>20 negatives there. I'm just getting a little confused.</p> <p>21 Q (By Mr. Williams) I will start over.</p> <p>22 The mere fact that a car company tests its makes and</p> <p>23 models to see whether the brakes work does not mean that</p> <p>24 the cars that are ultimately sold have brakes that do not</p> <p>25 work?</p>	<p style="text-align: right;">Page 264</p> <p>1</p> <p>2 Q (By Mr. Williams) Let me show you what we've marked as</p> <p>3 Exhibit No. D-1-- Exhibit No. 20. Pardon me.</p> <p>4 MS. PARFITT: Counsel, I have not seen</p> <p>5 this before.</p> <p>6 Can you represent to us what this is?</p> <p>7 MR. WILLIAMS: I will in a second.</p> <p>8 Q (By Mr. Williams) Have you ever seen this document,</p> <p>9 Dr. McTiernan, what's been marked as Exhibit No. 20?</p> <p>10 A I don't think so-- well--</p> <p>11 Q Did Plaintiffs' counsel provide this to you?</p> <p>12 A I don't recall.</p> <p>13 Q Let me represent to you that this is Exhibit No. D-1,</p> <p>14 D-1, to John Hopkins October 17, 2018 deposition.</p> <p>15 Will you accept that representation?</p> <p>16 A Yes.</p> <p>17 Q You see the tab number that has-- it bears a deposition</p> <p>18 tab number just like your deposition has exhibits with</p> <p>19 tabs?</p> <p>20 A Yes.</p> <p>21 Q Do you see that Exhibit D-1 appears to contain the same</p> <p>22 information as Hopkins' Exhibit No. 24, which you were</p> <p>23 provided by Plaintiffs' counsel, except there's an</p> <p>24 additional column that says "The whole story"?</p> <p>25 A I think there's an awful lot of information here.</p>
<p style="text-align: right;">Page 263</p> <p>1 A Correct.</p> <p>2 Q Do you know whether this Exhibit No. 24 that's in front</p> <p>3 of you, from Dr. Hopkins, represents final or preliminary</p> <p>4 test results?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: Final or preliminary?</p> <p>7 Can you explain that, meaning-- what do you mean by</p> <p>8 those two?</p> <p>9 Q (By Mr. Williams) Do you know the difference between a</p> <p>10 preliminary test and a final test?</p> <p>11 A I mean, in terms of what it means for the company, I</p> <p>12 don't know what final or preliminary would mean in terms</p> <p>13 of their testing procedures.</p> <p>14 Q Do you know, one way or the other, if any of the results</p> <p>15 were updated or corrected?</p> <p>16 MS. PARFITT: Objection; form.</p> <p>17 THE WITNESS: Updated for a particular</p> <p>18 sample or updated for all of their products?</p> <p>19 Q (By Mr. Williams) Either.</p> <p>20 A I think I'm confused.</p> <p>21 I see what was tested for this, and it says Shower</p> <p>22 to Shower, medicated powder, baby powder, so I would</p> <p>23 assume that that's an actual product.</p> <p>24 (Exhibit No. 20 marked</p> <p>25 for identification.)</p>	<p style="text-align: right;">Page 265</p> <p>1 Q Let's take a couple-- let's take the first one at the top</p> <p>2 of the page.</p> <p>3 Under "The whole story," it says, "Tremolite is not</p> <p>4 asbestos."</p> <p>5 Do you see that?</p> <p>6 A Yes.</p> <p>7 Q And you don't know, as you sit here, whether tremolite is</p> <p>8 or is not asbestos, right?</p> <p>9 MS. PARFITT: Objection; misstates her</p> <p>10 testimony.</p> <p>11 THE WITNESS: I am confused about that</p> <p>12 because IARC states that tremolite is asbestos, so--</p> <p>13 Q (By Mr. Williams) We'll get to that in a minute.</p> <p>14 Is it your testimony that the IARC monograph does</p> <p>15 not make any distinction between a mineral known as</p> <p>16 tremolite and one known as tremolite asbestos?</p> <p>17 MS. PARFITT: Objection; form,</p> <p>18 misstates her testimony.</p> <p>19 THE WITNESS: I don't recall. We</p> <p>20 would have to read it.</p> <p>21 Q (By Mr. Williams) You don't remember one way or another?</p> <p>22 A No.</p> <p>23 Q Do you see the last line on the first page refers to, in</p> <p>24 this same document, Exhibit No. 20 to your deposition,</p> <p>25 D-1 to Dr. Hopkins' deposition, it refers to trace</p>

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<p style="text-align: right;">Page 266</p> <p>1 amounts of fibrous minerals, but "The whole story" column</p> <p>2 indicates that that does not mean asbestos?</p> <p>3 MS. PARFITT: Objection.</p> <p>4 Is that what it says?</p> <p>5 Is that the question?</p> <p>6 Q (By Mr. Williams) Do you see that that's what it says?</p> <p>7 A It says, "Fibrous minerals does not mean asbestos," so--</p> <p>8 is it fibrous talc? That could be carcinogenic as well.</p> <p>9 Is that correct?</p> <p>10 Q Do you know the difference between fibrous talc and</p> <p>11 fibrous minerals?</p> <p>12 A I couldn't distinguish myself. I'm not a mineralogist,</p> <p>13 no.</p> <p>14 Q What's the basis for your testimony?</p> <p>15 I think you were suggesting a moment ago that</p> <p>16 fibrous talc is somehow carcinogenic.</p> <p>17 Is that what you were suggesting?</p> <p>18 A I believe that IARC considers that it could be, so I</p> <p>19 would have to look at the IARC report again to fully</p> <p>20 report.</p> <p>21 Q So the basis for your testimony then is that you believe</p> <p>22 that IARC states that fibrous talc is carcinogenic?</p> <p>23 A Yes, but I need to look at the report again.</p> <p>24 Q Okay. You are relying on five litigation reports</p> <p>25 authored or co-authored by Dr. Longo as part of his paid</p>	<p style="text-align: right;">Page 268</p> <p>1 Q Do you know one way or the other whether the samples that</p> <p>2 Dr. Longo tested were open and unsealed when he received</p> <p>3 them?</p> <p>4 A I don't recall reading that.</p> <p>5 I would have to look at the report again.</p> <p>6 Q Do you know that Dr. Longo did not personally test any of</p> <p>7 the samples he reports on in the litigation documents</p> <p>8 that you relied on in the case?</p> <p>9 MS. PARFITT: Objection; misstates the</p> <p>10 record.</p> <p>11 THE WITNESS: I just read the summary</p> <p>12 report, which looked like his company did the testing.</p> <p>13 Q (By Mr. Williams) Please turn to Page 57 of your report.</p> <p>14 I want to focus your attention on the fourth</p> <p>15 paragraph there that starts with the word "Asbestos."</p> <p>16 A Yes.</p> <p>17 Q Does that paragraph accurately summarize the bases of</p> <p>18 your opinion that asbestos is established as a cause of</p> <p>19 epithelial ovarian cancer?</p> <p>20 A Yes.</p> <p>21 Q You cite the 2011 Camargo, C-A-M-A-R-G-O, and the 2011</p> <p>22 Reid, R-E-I-D, meta-analyses in support of your opinion</p> <p>23 that asbestos is a cause of ovarian cancer, correct?</p> <p>24 A Yes.</p> <p>25 Q Those are References 71 and 72, right?</p>
<p style="text-align: right;">Page 267</p> <p>1 expert work for plaintiff lawyers in talcum powder</p> <p>2 litigation, correct?</p> <p>3 MS. PARFITT: Objection; form.</p> <p>4 THE WITNESS: Correct.</p> <p>5 Q (By Mr. Williams) Do you know-- do you think the chain</p> <p>6 of custody is important when it comes to samples that are</p> <p>7 being tested for asbestos?</p> <p>8 Do you know what I mean when I say "chain of</p> <p>9 custody"?</p> <p>10 A Why don't you explain it.</p> <p>11 Q Sure.</p> <p>12 I will ask you to assume that "chain of custody"</p> <p>13 refers to who has custody of a particular substance or</p> <p>14 item that is going to be tested from the time that it</p> <p>15 existed at its source to the time that it is tested.</p> <p>16 Do you understand what I mean?</p> <p>17 A Yes.</p> <p>18 Q Do you know where Dr. Longo got the samples that he</p> <p>19 tested?</p> <p>20 A I understood from the summaries in the beginnings of</p> <p>21 these reports that he received the samples from Johnson &</p> <p>22 Johnson.</p> <p>23 Q All of the samples?</p> <p>24 A I would have to look at the individual reports to</p> <p>25 determine that.</p>	<p style="text-align: right;">Page 269</p> <p>1 A Yes.</p> <p>2 Q You also cite Ferrante, F-E-R-R-A-N-T-E, a 2017 pooled</p> <p>3 analysis, in support of your opinion that asbestos is a</p> <p>4 cause of ovarian cancer, right?</p> <p>5 A Yes.</p> <p>6 Q You also cite to the IARC 2012 monograph on asbestos, an</p> <p>7 article by members of the IARC working group, correct?</p> <p>8 A Yes.</p> <p>9 Q Other than those materials, are you relying on anything</p> <p>10 else to support your opinion that asbestos is a cause of</p> <p>11 ovarian cancer?</p> <p>12 A No, I don't believe so, and I did not do a full</p> <p>13 systematic search with causal analysis for asbestos.</p> <p>14 I only did that for talcum powder products.</p> <p>15 Q Why didn't you do one for asbestos?</p> <p>16 A I wasn't asked to.</p> <p>17 Q Were you asked to include a discussion of asbestos in</p> <p>18 your report at all-- excuse me--</p> <p>19 A I was asked to respond about mechanisms-- sorry, to talk</p> <p>20 about mechanisms that may be explaining the association</p> <p>21 between talcum powder products and ovarian cancer risk,</p> <p>22 and when I looked at mechanisms, I often would see the</p> <p>23 potential for asbestos being included in talcum powder</p> <p>24 products, so I wanted to include that as one possible</p> <p>25 mechanism, especially given that asbestos is a known</p>

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<p>1 carcinogen.</p> <p>2 Q Let me focus your attention on Page 57 of your report,</p> <p>3 Exhibit No. 2, to the last sentence in that fourth</p> <p>4 paragraph that says, "IARC concluded that asbestos,</p> <p>5 fibrous talc, chromium, and nickel are Group 1 human</p> <p>6 carcinogens. IARC also classified cobalt as a 2B</p> <p>7 'possible' carcinogen."</p> <p>8 Do you see that?</p> <p>9 A Yes.</p> <p>10 Q Do you believe that Johnson's Baby Powder products</p> <p>11 contained chromium, nickel, and cobalt?</p> <p>12 A I would have to review some of these documents that</p> <p>13 talked about these--</p> <p>14 Q What are you relying on?</p> <p>15 MS. PARFITT: Please let her finish</p> <p>16 the answer.</p> <p>17 MR. WILLIAMS: I'm sorry.</p> <p>18 THE WITNESS: I would need to review</p> <p>19 the documents in the report responding to that.</p> <p>20 Q (By Mr. Williams) Are those heavy metals, the three</p> <p>21 metals I mentioned, the metals that you believe are or</p> <p>22 have ever been present in Johnson's Baby Powder products?</p> <p>23 MS. PARFITT: Objection; form.</p> <p>24 THE WITNESS: Again, I would have to</p> <p>25 review the documents.</p>	<p>1 you have evidence, do you believe that Johnson's Baby</p> <p>2 Powder in particular contains chromium, nickel, and</p> <p>3 cobalt?</p> <p>4 MS. PARFITT: Objection.</p> <p>5 THE WITNESS: I don't have evidence</p> <p>6 one way or the other.</p> <p>7 I did not look at that.</p> <p>8 I looked only at the general comments that talcum</p> <p>9 powder products could contain these metals.</p> <p>10 I did not look at Johnson & Johnson.</p> <p>11 Q (By Mr. Williams) Thank you.</p> <p>12 Are any of your opinions dependent on the assumption</p> <p>13 that the chemicals in the fragrance that goes into</p> <p>14 Johnson's Baby Powder products are carcinogenic?</p> <p>15 A I read one review by Dr. Crowley (Phonetic) who indicated</p> <p>16 that there were quite a few fragrances in these products</p> <p>17 that fall into the classification of carcinogenicity.</p> <p>18 Without that data, my opinion would still stand.</p> <p>19 Q Dr. Crowley is another expert Plaintiffs' witness that</p> <p>20 Plaintiffs' counsel has paid in connection with talc</p> <p>21 litigation, correct?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 THE WITNESS: To my knowledge, yes.</p> <p>24 Q (By Mr. Williams) Have you ever met or spoken with</p> <p>25 Dr. Crowley?</p>
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<p>1 Q (By Mr. Williams) As you sit here today, you are not</p> <p>2 able to tell us what the heavy metals are that are</p> <p>3 supposedly contained in Johnson's Baby Powder?</p> <p>4 MS. PARFITT: Objection; misstates her</p> <p>5 testimony, form.</p> <p>6 THE WITNESS: I would want to review</p> <p>7 the documents.</p> <p>8 Q (By Mr. Williams) Let me ask you this:</p> <p>9 Is it your opinion today, Doctor, that Johnson's</p> <p>10 Baby Powder products contain chromium, nickel, and</p> <p>11 cobalt?</p> <p>12 A Again, I would need to look at the documents to see what</p> <p>13 was found.</p> <p>14 Q So you can't state whether you have that opinion or not?</p> <p>15 MS. PARFITT: Objection. She needs to</p> <p>16 look at the document.</p> <p>17 What documents do you need to see?</p> <p>18 THE WITNESS: I would want to see-- I</p> <p>19 guess Longo-- whoever was looking at these to see what</p> <p>20 was there, but my paragraph did not talk about Johnson &</p> <p>21 Johnson.</p> <p>22 My paragraph talked about talcum powder products</p> <p>23 having these constituents.</p> <p>24 Q (By Mr. Williams) That's my point.</p> <p>25 So as you sit here today, based on your review, do</p>	<p>1 A No, I have not.</p> <p>2 Q Are you relying on Dr. Crowley's litigation report for</p> <p>3 your opinion that perineal use of Johnson's Baby Powder</p> <p>4 products can cause ovarian cancer?</p> <p>5 A Yes, I have looked at his report.</p> <p>6 Q What chemicals did Dr. Crowley identify as fragrance</p> <p>7 constituents contained in Johnson's Baby Powder products?</p> <p>8 A There were many.</p> <p>9 I would have to see the report.</p> <p>10 Do you have it?</p> <p>11 Q I don't want to take the time to do that.</p> <p>12 Let me just ask you this:</p> <p>13 Did you do anything to independently verify whether</p> <p>14 those constituents are, in fact, contained in Johnson's</p> <p>15 Baby Powder products?</p> <p>16 A No, I did not.</p> <p>17 Q We have talked a little bit about IARC today, and I want</p> <p>18 to ask you some questions about that.</p> <p>19 You are familiar with the International Agency for</p> <p>20 Research on Cancer, right?</p> <p>21 A Yes, I am.</p> <p>22 Q You have done work with them?</p> <p>23 A Yes.</p> <p>24 Q IARC has five different categories it places substances</p> <p>25 into with respect to whether they are or may be</p>

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<p style="text-align: right;">Page 274</p> <p>1 carcinogenic, correct?</p> <p>2 A I can't respond to whether it's exactly five or not.</p> <p>3 I have looked at these-- do we have a list of them?</p> <p>4 Q Sure.</p> <p>5 It is-- we'll mark it as Exhibit No. 21.</p> <p>6 (Exhibit No. 21 marked</p> <p>7 for identification.)</p> <p>8</p> <p>9 Q (By Mr. Williams) This is the IARC monograph on talc.</p> <p>10 A 2012?</p> <p>11 Q This one is 2010.</p> <p>12 A 2010, okay.</p> <p>13 Q Let me refer you to Page 35 of the document.</p> <p>14 Do you see "Group 2B" listed there?</p> <p>15 A Yes.</p> <p>16 Q That is where the agent is possibly carcinogenic to</p> <p>17 humans, and then there is a fairly long description of</p> <p>18 what that means.</p> <p>19 Do you see that?</p> <p>20 A Yes.</p> <p>21 Q And it is your understanding that talc has been listed as</p> <p>22 a Group 2B substance?</p> <p>23 A Yes.</p> <p>24 You are using data up to 2006, yes.</p> <p>25 Q Of the almost 1000 substances that IARC has reviewed, do</p>	<p style="text-align: right;">Page 276</p> <p>1 review.</p> <p>2 Q Okay. And let me refer you to Page 35 again, under Group</p> <p>3 2B where that's the definition of the agent being</p> <p>4 possibly carcinogenic to humans.</p> <p>5 Do you see that?</p> <p>6 A Yes.</p> <p>7 Q It says, "This category is used for agents for which</p> <p>8 there is limited evidence of carcinogenicity in humans</p> <p>9 and less than sufficient evidence of carcinogenicity in</p> <p>10 experimental animals."</p> <p>11 Did I read that right?</p> <p>12 A Yes.</p> <p>13 Q Do you remember, as you sit there, the definition of</p> <p>14 "limited evidence of carcinogenicity" under IARC's</p> <p>15 definitions?</p> <p>16 A No, I don't.</p> <p>17 Q Take a look at Page 31.</p> <p>18 On Page 31 of Exhibit No. 21, there is a definition</p> <p>19 at the bottom of the page for "limited evidence of</p> <p>20 carcinogenicity," right?</p> <p>21 A Yes.</p> <p>22 Q And it says, "A positive association has been observed</p> <p>23 between exposure to the agent and cancer for which a</p> <p>24 causal interpretation is considered by the working group</p> <p>25 to be credible, but chance, bias, or confounding could</p>
<p style="text-align: right;">Page 275</p> <p>1 you know how many have been classified as Group 4, which</p> <p>2 is on the next page, "The agent is probably not</p> <p>3 carcinogenic to humans"?</p> <p>4 A No, I haven't.</p> <p>5 Q If I were to represent to you that there was one, and</p> <p>6 only one, substance that they have reviewed that was put</p> <p>7 into Group 4, would that surprise you?</p> <p>8 MS. PARFITT: Objection; form.</p> <p>9 THE WITNESS: It would not surprise me</p> <p>10 because they probably are only looking at things that are</p> <p>11 potentially carcinogenic.</p> <p>12 Q (By Mr. Williams) You mentioned earlier today that IARC</p> <p>13 sets a high bar for listing something as a Group 2B</p> <p>14 possible substance.</p> <p>15 Do you remember saying that?</p> <p>16 A I don't, but I believe you.</p> <p>17 Q What was the basis for your statement that IARC sets a</p> <p>18 high bar as opposed to some other level bar for</p> <p>19 determining whether a substance is a Group 2B substance?</p> <p>20 A From my understanding, they do a systematic review. They</p> <p>21 set up a panel of scientists, and then they do a</p> <p>22 systematic review, including studies from humans and</p> <p>23 animals, and they did this for-- for talcum powder</p> <p>24 products-- for talc, they did it up to 2006, and they did</p> <p>25 not do meta-analysis, but they did do a systematic</p>	<p style="text-align: right;">Page 277</p> <p>1 not be ruled out with reasonable confidence."</p> <p>2 Did I read that right?</p> <p>3 A Yes.</p> <p>4 Q Remember earlier today we were talking about chance,</p> <p>5 bias, and confounding factors needing to be ruled out in</p> <p>6 order to move something from a Group 2B designation to a</p> <p>7 higher designation, and you said, "I would have to look</p> <p>8 at the IARC monograph"?</p> <p>9 Do you remember that?</p> <p>10 A Yes.</p> <p>11 Q Now that we are looking at the IARC monograph, and you</p> <p>12 see the definition of "limited evidence of</p> <p>13 carcinogenicity," will you agree with me now that in</p> <p>14 order for something to move up from this Level 2B, where</p> <p>15 there's limited evidence of carcinogenicity in humans, to</p> <p>16 some higher level, one would need to rule out or</p> <p>17 specifically the IARC group would need to rule out</p> <p>18 chance, bias, and confounding?</p> <p>19 MS. PARFITT: Objection; form.</p> <p>20 THE WITNESS: Yes, because they state</p> <p>21 that in the category above, "Sufficient."</p> <p>22 Q (By Mr. Williams) And when you say "yes," "yes," they</p> <p>23 would have to rule out all of those things, correct?</p> <p>24 A Yes, with reasonable confidence.</p> <p>25 Q Now, as we sit here today, IARC still lists talc as a 2B</p>

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<p>1 substance, correct?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: IARC has not updated</p> <p>4 their 2006 data, correct.</p> <p>5 Q (By Mr. Williams) Therefore the most recent update lists</p> <p>6 talc as a Group 2B substance, correct?</p> <p>7 MS. PARFITT: Objection; form.</p> <p>8 THE WITNESS: Using data up to 2006,</p> <p>9 yes.</p> <p>10 Q (By Mr. Williams) You keep saying, "using data up to</p> <p>11 2006."</p> <p>12 Do you have any basis for-- strike that.</p> <p>13 You testified earlier today that you believe that</p> <p>14 IARC would set a higher designation if they had the</p> <p>15 results of studies since 2006, correct?</p> <p>16 A I believe it would be reasonable to expect that, given</p> <p>17 that there's more studies published since that time.</p> <p>18 Q And when you say that you believe it would be reasonable</p> <p>19 to expect that, you expected it, right?</p> <p>20 MS. PARFITT: Objection.</p> <p>21 THE WITNESS: I can't say what a panel</p> <p>22 of scientists would say if it was faced with reviewing</p> <p>23 the literature.</p> <p>24 All I can say is the literature-- all I can say is</p> <p>25 the literature has been increased significantly in the</p>	<p>1 you relied upon in preparing your report, correct?</p> <p>2 A Yes.</p> <p>3 Q It was published in 2008?</p> <p>4 A Yes.</p> <p>5 Q That is two years after IARC met to discuss talc?</p> <p>6 A Yes.</p> <p>7 Q Three of the four authors of this meta-analysis were</p> <p>8 participants in the IARC working group.</p> <p>9 Do you remember that?</p> <p>10 A Yes.</p> <p>11 Q If you look at the last page of this exhibit, Exhibit</p> <p>12 No. 22, there's an acknowledgments section on Page 360.</p> <p>13 It says, "The work reported in this paper was</p> <p>14 initiated while SH, JS, and EW were part of an IARC</p> <p>15 monograph working group of the International Agency for</p> <p>16 Research on Cancer, Lyon, France."</p> <p>17 Do you see that?</p> <p>18 A Yes.</p> <p>19 Q So after the working group determined, and by that I mean</p> <p>20 the IARC working group determined, that chance, bias, or</p> <p>21 confounding could not be ruled out as an explanation for</p> <p>22 the reported association between talc and ovarian cancer,</p> <p>23 three of the members of that working group continued</p> <p>24 their work in this article, correct?</p> <p>25 MS. PARFITT: Objection; form,</p>
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<p>1 last ten years.</p> <p>2 Q (By Mr. Williams) And what study are you referring to or</p> <p>3 studies are you referring to?</p> <p>4 A So some of the larger case-control studies that were</p> <p>5 published in recent years, the two meta-analyses, and the</p> <p>6 pooled analysis.</p> <p>7 Q Anything else?</p> <p>8 A In terms of epidemiology, that's it.</p> <p>9 Q Let me show you to one of the studies that has been done</p> <p>10 since the IARC monograph was first drafted in 2006.</p> <p>11 We'll mark it as Exhibit No. 22.</p> <p>12 (Exhibit No. 22 marked</p> <p>13 for identification.)</p> <p>14</p> <p>15 Q (By Mr. Williams) The Langseth study, which is Exhibit</p> <p>16 No. 22, is one of the studies there you rely upon,</p> <p>17 correct?</p> <p>18 A That's correct.</p> <p>19 Q Let me ask you to turn to Page 360, which is the-- I</p> <p>20 believe the last page of the study.</p> <p>21 Do you see that there are 34 publications cited as</p> <p>22 references to the Langseth article?</p> <p>23 A Yes.</p> <p>24 Q For the record, "Langseth" is L-A-N-G-S-E-T-H.</p> <p>25 The Langseth study was one of the meta-analyses that</p>	<p>1 misstates the substance of this article.</p> <p>2 THE WITNESS: Yes.</p> <p>3 Q (By Mr. Williams) You may answer.</p> <p>4 A Yes.</p> <p>5 Q Does this paper report the perineal use of talc in fact</p> <p>6 causes ovarian cancer?</p> <p>7 A I don't see that they did a full causal analysis in this</p> <p>8 paper, but I see that they have a pooled odds ratio of</p> <p>9 1.35, which is statistically significant.</p> <p>10 Yeah, 1.35.</p> <p>11 Q You read this study, right?</p> <p>12 A Yes.</p> <p>13 Q Let's take a look at Page 359.</p> <p>14 Under the heading "Proposal to research community,"</p> <p>15 do you see that?</p> <p>16 A Yes.</p> <p>17 Q Right underneath that it says, "The current body of</p> <p>18 experimental and epidemiological evidence is insufficient</p> <p>19 to establish a causal association between perineal use of</p> <p>20 talc and ovarian cancer risk."</p> <p>21 Did I read that right?</p> <p>22 A Yes.</p> <p>23 Q Can you and I agree that that is the opposite of the</p> <p>24 conclusion that you are intending to express in this</p> <p>25 litigation?</p>

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<p style="text-align: right;">Page 282</p> <p>1 MS. PARFITT: Objection; form.</p> <p>2 THE WITNESS: Using information</p> <p>3 available to 2018, I do have a different opinion than</p> <p>4 these investigators did in using their data up to 2006.</p> <p>5 Q (By Mr. Williams) They-- strike that.</p> <p>6 They would have information up until the time they</p> <p>7 published this study, the Langseth study, right, which</p> <p>8 was done in 2008?</p> <p>9 MS. PARFITT: Objection.</p> <p>10 THE WITNESS: Not necessarily up until</p> <p>11 this date.</p> <p>12 It takes a while to get-- it was accepted in 2007,</p> <p>13 so their data are going to be studies probably only up to</p> <p>14 2006, if the paper was already written and accepted in</p> <p>15 2007, October.</p> <p>16 Q (By Mr. Williams) After this Langseth paper was</p> <p>17 published, there were large cohort studies, prospective</p> <p>18 studies, that were published, true?</p> <p>19 A They were small in terms of the number of cases.</p> <p>20 They came from large cohorts, but the number of</p> <p>21 cases were small.</p> <p>22 Q Are you referring to the cohort studies that were</p> <p>23 published in 2008, 2010, and 2014?</p> <p>24 MS. PARFITT: Objection; form.</p> <p>25 THE WITNESS: Two thousand-- yes-- how</p>	<p style="text-align: right;">Page 284</p> <p>1 combined?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: I don't think we had-- I</p> <p>4 don't think we discussed that particular-- and we didn't</p> <p>5 do a power analysis with the numbers that they had, but</p> <p>6 together they had-- what was it, 900, so they probably</p> <p>7 were powered with a relative risk of 1.3.</p> <p>8 Q (By Mr. Williams) Well, whatever that testimony was, it</p> <p>9 was.</p> <p>10 Let me ask you this:</p> <p>11 It is a fact that after the IARC monograph-- strike</p> <p>12 that.</p> <p>13 After-- it is a fact that after the data that</p> <p>14 underlay the IARC monograph, after the Langseth study was</p> <p>15 published in 2008, there were additional cohort studies</p> <p>16 that were published, correct?</p> <p>17 A As well as about eight case-control studies.</p> <p>18 Quite a few studies were published after.</p> <p>19 Q And based upon that, you speculate that if IARC were to</p> <p>20 undertake an analysis of whether talc is causally</p> <p>21 associated with ovarian cancer, that you believe that</p> <p>22 they would change their mind?</p> <p>23 MS. PARFITT: Objection; form.</p> <p>24 THE WITNESS: I speculate it would be</p> <p>25 reasonable for a scientific panel to come up with a</p>
<p style="text-align: right;">Page 283</p> <p>1 many cases do we have?</p> <p>2 I think we covered that earlier, the number of cases</p> <p>3 that would be needed.</p> <p>4 So Women's Health Initiative published in 2014 had</p> <p>5 429 cases.</p> <p>6 The sister study in 2016 had 154.</p> <p>7 The Nurses' Health Study, which the problem with</p> <p>8 that was they weren't-- they changed their categories</p> <p>9 with exposure, but that one did have a larger number,</p> <p>10 797.</p> <p>11 Q (By Mr. Williams) You remember earlier today we went</p> <p>12 through the whole discussion of whether or not there were</p> <p>13 sufficient number of cases, right?</p> <p>14 A And that was a different discussion that was about the</p> <p>15 pooled analysis-- sorry, the meta-analysis of the cohort</p> <p>16 studies.</p> <p>17 It wasn't about these individual studies.</p> <p>18 Q Let me talk to you now about the meta-analysis of those</p> <p>19 studies that were conducted that are cohort studies.</p> <p>20 Do you have those in mind?</p> <p>21 A Yes.</p> <p>22 Q Do you wish to change any of the testimony that you gave</p> <p>23 earlier today concerning the-- whether or not there was a</p> <p>24 sufficient number of cases, as part of the pooled</p> <p>25 analysis, for the cohort studies to have power if</p>	<p style="text-align: right;">Page 285</p> <p>1 different classification after reviewing the new human</p> <p>2 data that have been available the last ten years.</p> <p>3 MR. WILLIAMS: Let's take one final</p> <p>4 break, if we can.</p> <p>5 VIDEOGRAPHER: Going off the record,</p> <p>6 the time is 4:54 p.m.</p> <p>7 (Recess 4:54 to 5:09 p.m.)</p> <p>8</p> <p>9 VIDEOGRAPHER: We are back on the</p> <p>10 record. The time is 5:09 p.m.</p> <p>11 Q (By Mr. Williams) Dr. McTiernan, just a few more minutes</p> <p>12 from me, and then we have just a couple minutes of</p> <p>13 questioning from Imerys counsel, but I have to do it. I</p> <p>14 have to have you grab the Berge study one more time,</p> <p>15 Exhibit No. 16A.</p> <p>16 Earlier today, this afternoon actually, we had a</p> <p>17 discussion about statistical significance, and I was</p> <p>18 trying to focus you on statistical significance as it</p> <p>19 relates to the cohort studies that are listed on page--</p> <p>20 listed in Figure No. 2 on Page 7 of Exhibit No. 16A.</p> <p>21 Do you have that in front of you?</p> <p>22 A Yes.</p> <p>23 Q And you'll recall that I focused you on the subtotal for</p> <p>24 cohort studies with regard to what the relative risk was</p> <p>25 and the confidence interval, and you noted that it was</p>

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<p style="text-align: right;">Page 286</p> <p>1 1.02 as a relative risk with a confidence interval that</p> <p>2 goes all the way up to 1.20.</p> <p>3 Do you recall that?</p> <p>4 A Yes.</p> <p>5 Q And when I made the point that it was lacking statistical</p> <p>6 significance, you said, "But the confidence interval</p> <p>7 includes one, so that would not be statistically</p> <p>8 significant, but it ranges up to 1.2, which means that</p> <p>9 the relative risk could be as high as 1.2 for the cohort</p> <p>10 study."</p> <p>11 Do you recall saying that?</p> <p>12 A Correct.</p> <p>13 Q It is equally true, based on the confidence interval</p> <p>14 reported on Page 7, that the relative risks could be as</p> <p>15 low as 0.85, correct?</p> <p>16 A That's correct.</p> <p>17 Q And with respect to each of the case-control studies that</p> <p>18 did not find statistical significance, first you see</p> <p>19 Cramer in 1982, that one that had a 0.70 relative risk--</p> <p>20 you see that one?</p> <p>21 A Yes.</p> <p>22 Q That one had a low--</p> <p>23 A That's Hartge.</p> <p>24 Q That's Hartge, pardon me. I shouldn't have said</p> <p>25 "Cramer."</p>	<p style="text-align: right;">Page 288</p> <p>1 of the confidence interval was 0.70, correct?</p> <p>2 A Yes.</p> <p>3 One thing that all of these studies had in common is</p> <p>4 they were very small, and you get a very wide confidence</p> <p>5 interval with these small studies.</p> <p>6 You notice the larger studies, the confidence</p> <p>7 intervals, such as Cramer 2016, was 1.14 up to 1.5.</p> <p>8 That's a much more narrow confidence interval, and that's</p> <p>9 because it's a larger study.</p> <p>10 Q So let's focus now on what we were focused on this</p> <p>11 afternoon, which is the cohort studies.</p> <p>12 With respect to the cohort studies, in the aggregate</p> <p>13 the low point was 0.85, correct?</p> <p>14 A That's correct.</p> <p>15 Q And those cohort studies, we established earlier today,</p> <p>16 have a total number of cases that exceeded 1300, right?</p> <p>17 A Correct.</p> <p>18 Q That's all I need on that.</p> <p>19 I wanted to ask you about one of the Bradford Hill</p> <p>20 elements or factors, the one that has to do with</p> <p>21 biological plausibility, okay?</p> <p>22 A Mm-hm.</p> <p>23 Q Is that a "yes"?</p> <p>24 A Yes.</p> <p>25 Q Okay. So can you cite a single study, animal or human,</p>
<p style="text-align: right;">Page 287</p> <p>1 Let me start again.</p> <p>2 The first case-control study that did not have a</p> <p>3 statistically significant relative risk was Hartge 1983,</p> <p>4 right?</p> <p>5 A Yes.</p> <p>6 Q And its lower confidence interval, the low side of that,</p> <p>7 was 0.83, correct?</p> <p>8 A You're looking at Whittemore, but I think you're talking</p> <p>9 about Hartge.</p> <p>10 Q Sorry, 0.40.</p> <p>11 A Yes.</p> <p>12 Q So the relative risk for Hartge could go as low as 0.40,</p> <p>13 right?</p> <p>14 A Yes.</p> <p>15 Q The relative risk for Whittemore could go as low as 0.83,</p> <p>16 right?</p> <p>17 A Yes.</p> <p>18 What it means is a 95 percent chance that the risk</p> <p>19 is within that range, 0.83 up to 1.74.</p> <p>20 Q So it could be as high as 1.74 for Whittemore or as low</p> <p>21 as 0.83?</p> <p>22 A That's correct.</p> <p>23 Q And for Booth, the low point was 0.80, correct?</p> <p>24 A Yes.</p> <p>25 Q And for the next one, Harlow & Weiss, 1989, the low end</p>	<p style="text-align: right;">Page 289</p> <p>1 that traces externally applied talc up through the</p> <p>2 reproductive organs to the ovaries?</p> <p>3 MS. PARFITT: Objection; form.</p> <p>4 THE WITNESS: So the question is</p> <p>5 externally applied talc?</p> <p>6 MR. WILLIAMS: Correct.</p> <p>7 THE WITNESS: So in humans that would</p> <p>8 be unethical to do to see if that can move up to the</p> <p>9 ovaries.</p> <p>10 In terms of animals-- so in animals, talc was placed</p> <p>11 in the vaginas, and it moved within four days up to the</p> <p>12 ovaries.</p> <p>13 Q (By Mr. Williams) And which study is that?</p> <p>14 A That's on Henderson 86.</p> <p>15 Q Okay. Thank you.</p> <p>16 Anything else?</p> <p>17 A Let me see.</p> <p>18 In terms of humans, quite a few have been done with</p> <p>19 particles of similar size to talc, which was thought to</p> <p>20 be-- let me try to find where I have these.</p> <p>21 So it wouldn't have the ethical issue, so inert</p> <p>22 particles of carbon black were placed in women's vaginas</p> <p>23 and were found to move in 30 minutes in two of three</p> <p>24 patients, and that's the Egli study.</p> <p>25 Q Which one is that?</p>

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<p>1 A Egli, E-G-L-I.</p> <p>2 Q Anything else?</p> <p>3 A There was a surgical glove study with starch.</p> <p>4 There was one radioactive tracer labelled human</p> <p>5 albumin microspheres placed in-- there was--</p> <p>6 radio-labelled albumin was placed in women's vaginas one</p> <p>7 day before pelvic surgery, and of 14 women, nine showed</p> <p>8 radioactivity in the fallopian tubes.</p> <p>9 Q Which study was that?</p> <p>10 A So that was the Venter, V-E-N-T-E-R.</p> <p>11 One study on migration of talc-- sorry, no,</p> <p>12 evaluated powder, so this was a starch powder on surgical</p> <p>13 gloves that were used to perform pelvic exam in advance</p> <p>14 of surgery, and they found statistically significant-- so</p> <p>15 this is the Sjosten study. It's S-J-O-S-T-E-N.</p> <p>16 Q Anything else?</p> <p>17 A And that's in terms of migration for humans and animals,</p> <p>18 I believe.</p> <p>19 Q So is it accurate to say that not one of the studies that</p> <p>20 you just mentioned -- Egli, Venter, Sjosten or Henderson</p> <p>21 -- involves tracing externally applied talc in the</p> <p>22 perineal area up through the reproductive organs through</p> <p>23 the ovaries?</p> <p>24 A There are no such studies in humans, that's correct.</p> <p>25 It would be unethical to apply it externally and</p>	<p>1 Q But none of the studies that you mentioned involve</p> <p>2 reviewing perineal use external to the vagina and</p> <p>3 followed the talc up through the reproductive organs,</p> <p>4 true or not true?</p> <p>5 A That's correct.</p> <p>6 Q Can you cite any published study concluding that</p> <p>7 particles on the outside of the vagina can migrate inside</p> <p>8 and up the genital tract to the ovary?</p> <p>9 A I don't believe it was cited in my report.</p> <p>10 Q Assuming for a moment that talcum powder can reach the</p> <p>11 ovaries, is it your opinion that talcum powder produces</p> <p>12 chronic inflammation that somehow leads to ovarian</p> <p>13 cancer?</p> <p>14 A Yes, it is my opinion that it can cause chronic</p> <p>15 inflammation and it doesn't need to reach the ovaries.</p> <p>16 Many cancers, especially serous cancers, are thought</p> <p>17 to begin in the fallopian tubes, and they would need to</p> <p>18 rise as high as that.</p> <p>19 Q So inflammation is the biological mechanism that you</p> <p>20 believe is plausible for perineal talc use to cause</p> <p>21 ovarian cancer, correct?</p> <p>22 A I believe it's one very plausible mechanism.</p> <p>23 Q There are no reports in the literature of externally</p> <p>24 applied talcum powder products leading to inflammation,</p> <p>25 granulomas, fibrosis, or adhesions anywhere along a</p>
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<p>1 follow it up through the pelvic organs.</p> <p>2 Q Same with the animals though, none of the animal studies</p> <p>3 that you just mentioned, or the only animal study you</p> <p>4 mentioned, does not deal with externally applied talc</p> <p>5 moving up through the reproductive organs through the</p> <p>6 ovaries, correct?</p> <p>7 MS. PARFITT: Object to form.</p> <p>8 THE WITNESS: They're vaginally</p> <p>9 applied.</p> <p>10 Q (By Mr. Williams) In the vagina, correct?</p> <p>11 A Into the vagina, yes.</p> <p>12 Q So you and I can agree that there is a difference between</p> <p>13 the outer area and inside the vagina?</p> <p>14 MS. PARFITT: Objection.</p> <p>15 THE WITNESS: There are plenty of ways</p> <p>16 for which anything on the external part of the peroneum</p> <p>17 can move into the vagina.</p> <p>18 Q (By Mr. Williams) There's not one study that you've</p> <p>19 cited for humans that involved particles other than talc</p> <p>20 or any known toxic substance.</p> <p>21 There are articles that inject into the vagina the</p> <p>22 particles and they see what happens, right?</p> <p>23 A Mm-hm.</p> <p>24 Q Is that "yes"?</p> <p>25 A Yes.</p>	<p>1 woman's reproductive tract, correct?</p> <p>2 MS. PARFITT: Objection; form.</p> <p>3 THE WITNESS: Again, it's the ethics</p> <p>4 of applying something that could potentially be</p> <p>5 carcinogenic to see what would occur.</p> <p>6 Q (By Mr. Williams) Can you identify any study that shows</p> <p>7 inflammation, granulomas, fibrosis, or adhesions anywhere</p> <p>8 along a woman's reproductive tract as a result of her</p> <p>9 external genital talcum powder application?</p> <p>10 A I don't think I cited any such studies.</p> <p>11 Q Can you identify any published animal study where talcum</p> <p>12 powder actually caused ovarian cancer in the animal?</p> <p>13 A There have been studies that showed that talc can lead to</p> <p>14 cyst formation and epithelial changes in rats.</p> <p>15 Q Which study is that?</p> <p>16 A That is 122.</p> <p>17 Hamilton.</p> <p>18 Q Any other studies?</p> <p>19 A Say that again?</p> <p>20 Q You said "Hamilton," right?</p> <p>21 A Hamilton, 1984.</p> <p>22 Q Any other studies?</p> <p>23 A Oh, and a mouse study, which is 123, Van Dyke.</p> <p>24 Q 123?</p> <p>25 A 123, yes, that talc can cause super NI generation and</p>

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<p style="text-align: right;">Page 294</p> <p>1 release from mouth to macrophages (phonetic). 2 Q Anything else? 3 A I am just looking. 4 So you are talking about ovarian tumors. 5 The NTP, the National Toxicology Program, has also 6 done rat studies and found that exposure to talc cause-- 7 it was an inhalation study, caused clear evidence of 8 carcinogenesis in females in terms of cancer of the 9 adrenal gland and the lung and possible carcinogenic 10 activity in males. 11 Q What was the date of that NTP study? 12 A NTP study? That was No. 124. 13 1993. 14 Q Are you familiar with the methodology of that study? 15 A I have read the study, yes. 16 Q And you know that the rats were subjected to talcum 17 powder pumped into a cage-- a closed cage, I think it 18 was, six hours a day, five days a week, for their entire 19 lives, right? 20 A Yes. 21 Q Do you think that that has applicability to human beings 22 using talcum powder in their homes? 23 MS. PARFITT: Objection; form. 24 THE WITNESS: Using talcum powder in-- 25 Q (By Mr. Williams) In their homes.</p>	<p style="text-align: right;">Page 296</p> <p>1 concluded that the 1993 rat study was not applicable or 2 appropriate for application to humans? 3 MS. PARFITT: Objection; misstates the 4 evidence. 5 Q (By Mr. Williams) I'm sorry, I misspoke. 6 Are you aware that the FDA concluded that the 1993 7 NTP study was not applicable to human beings? 8 MS. PARFITT: Objection; misstates the 9 evidence in the case. 10 THE WITNESS: I would have to see both 11 the FDA statement and the NTP. 12 Q (By Mr. Williams) Can you identify-- strike that. 13 I want to distinguish between a study, an animal 14 study, where talcum powder caused inflammation on the one 15 hand, with an animal study that found that talcum powder 16 caused ovarian cancer. 17 Do you have that distinction that I'm making in 18 mind? 19 Do you have the distinction I'm making in mind? 20 A I'm just reading through my report. 21 Q Inflammation on the one hand, ovarian cancer on the 22 other. 23 I am trying to make that distinction. 24 Do you have that distinction in mind? 25 When you say "yes," I'll ask you a question.</p>
<p style="text-align: right;">Page 295</p> <p>1 A I think the correlation would be a larger concentrated 2 dose being introduced into the genital tract, and if the 3 talc is carcinogenic to animals and wasn't seen in the 4 control animals, then it's still concerning. 5 Q Did the 1993 NTP study in fact report any ovarian cancer 6 in the female rats or mice? 7 A I don't believe that these rats developed ovarian cancer. 8 They did not develop ovarian cancer. 9 Q Not one of them did, correct? 10 A No. 11 It may not be an ovarian cancer model. 12 Q Did the 1993 NTP study report any neoplastic changes in 13 the ovaries of the female rats or mice? 14 A Not to my knowledge. 15 Again, it's not a model for ovarian cancer. 16 Q Can we agree that the NTP 1993 rat and mouse study does 17 not in fact show that talc causes inflammation, which 18 inflammation leads to neoplastic change or cancer in an 19 animal's ovaries? 20 MS. PARFITT: Objection; form. 21 THE WITNESS: I don't have the study 22 in front of me. 23 I don't recall that they did the full mechanistic 24 study. 25 Q (By Mr. Williams) Do you recall that the NTP expressly</p>	<p style="text-align: right;">Page 297</p> <p>1 A So in Genofre's, G-E-N-O-F-R-E, study, in animal models, 2 injection of talc into the pleura causes local and 3 systemic inflammatory response, so it includes elevated 4 levels of C-reactive protein and interleukin 6, and CEGF 5 and TGF beta, and several of these are associated with 6 increased risk of ovarian cancer in humans, including 7 C-reactive protein and interleukin 8. 8 Q Did that study that you are referring to, the Genofre, 9 G-E-N-O-F-R-E, 2009 study, are you saying that that study 10 showed that talc caused inflammation that led to 11 neoplastic or cancerous changes in the animals? 12 A This was a model looking at inflammation. 13 Q And did that study show that talc application to the 14 animal caused inflammation that led to cancerous changes? 15 A To my knowledge, it stopped at the inflammatory response. 16 Q None of the studies that you are relying upon -- Genofre 17 -- compared C-reactive proteins, and that's C hyphen 18 reactive proteins, or IL 8 levels between perineal talc 19 users and nontalc users, correct? 20 MS. PARFITT: Objection; form. 21 THE WITNESS: I don't know about 22 research that has looked at that. 23 I do know that women with high levels of C-reactive 24 protein or interleukin 8 are at an increased risk of 25 developing ovarian cancer.</p>

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<p style="text-align: center;">Page 298</p> <p>1 Q (By Mr. Williams) None of the studies that you rely on</p> <p>2 concluded that C-reactive proteins or IL 8 levels can</p> <p>3 cause a local inflammatory response in the ovary,</p> <p>4 correct?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: C-reactive protein and</p> <p>7 interleukin 8 are the inflammatory response.</p> <p>8 They are the products that are made during</p> <p>9 inflammatory response, to my knowledge.</p> <p>10 Q (By Mr. Williams) Was that an inflammatory response in</p> <p>11 the ovary?</p> <p>12 A It was blood-- the epidemiologic studies you are talking</p> <p>13 about was in blood.</p> <p>14 Q Can you identify any published study concluding that</p> <p>15 increased C-reactive protein levels leads to ovarian</p> <p>16 cancer in humans?</p> <p>17 A Yes, I have that.</p> <p>18 I am looking for it.</p> <p>19 I thought that I had reference to meta-analysis of</p> <p>20 C-reactive protein and risk of ovarian cancer, but it's</p> <p>21 not showing up.</p> <p>22 Q Can you identify any published study concluding that the</p> <p>23 C-reactive protein levels are greater in perineal talc</p> <p>24 users than nonperineal talc users?</p> <p>25 A I did not look at that.</p>	<p style="text-align: center;">Page 300</p> <p>1 Q Okay. That they, for a period of time, supplied the raw</p> <p>2 material talc to Johnson & Johnson for the baby powder.</p> <p>3 Are you aware of that?</p> <p>4 A I was aware that they did supply.</p> <p>5 I don't know anything about when or how much, no.</p> <p>6 Q Okay. So just a couple areas of questions:</p> <p>7 There were some questions that Mr. Williams asked</p> <p>8 you regarding chromium, nickel, and cobalt, and you said</p> <p>9 you do not know if those were contained in the Johnson &</p> <p>10 Johnson powder specifically.</p> <p>11 Do you recall that?</p> <p>12 A I do recall saying that.</p> <p>13 Q Okay. Same question as to Imerys.</p> <p>14 You do not know if Imerys raw talc specifically</p> <p>15 contained chromium, nickel, or cobalt, do you?</p> <p>16 A I would have to look.</p> <p>17 I know that the Pier deposition had some information</p> <p>18 at least about some of the talc.</p> <p>19 Do we have that?</p> <p>20 MS. PARFITT: Give us one moment.</p> <p>21 Do you want to have her identify--</p> <p>22 MS. ERFLE: Please do.</p> <p>23 THE WITNESS: So this is Exhibit</p> <p>24 No. 47 of Pier testimony, 9/13/18.</p> <p>25 Q (By Ms. Erfle) That's great. Let's look at that.</p>
<p style="text-align: center;">Page 299</p> <p>1 Q Can you identify any published study concluding that the</p> <p>2 interleukin, and that's I-N-T-E-R-L-E-U-K-I-N, dash 8</p> <p>3 levels are greater in perineal talc users than</p> <p>4 nonperineal talc users?</p> <p>5 A I did not look at that.</p> <p>6 MR. WILLIAMS: That's all the</p> <p>7 questions I have, Doctor. Thank you very much.</p> <p>8 Let's go off the record.</p> <p>9 VIDEOGRAPHER: Going off the record,</p> <p>10 the time is 5:33 p.m. Please stand by.</p> <p>11 (Recess 5:33 to 5:35 p.m.)</p> <p>12</p> <p>13 VIDEOGRAPHER: We are back on the</p> <p>14 record. The time is 5:35 p.m.</p> <p>15</p> <p>16</p> <p>17 EXAMINATION</p> <p>18 BY MS. ERFLE:</p> <p>19 Q Dr. McTiernan, again, my name is Nancy Erfle. I</p> <p>20 represent Imerys Talc America, and you understand that's</p> <p>21 a different defendant than Johnson & Johnson, correct?</p> <p>22 A Yes, I do.</p> <p>23 Q And do you understand the role in this litigation, what</p> <p>24 their role is?</p> <p>25 A No. You can explain it.</p>	<p style="text-align: center;">Page 301</p> <p>1 So you have that in front of you?</p> <p>2 A Yes.</p> <p>3 Q And what about that indicates that there is chromium,</p> <p>4 nickel, or cobalt in the raw material specifically</p> <p>5 provided to Johnson & Johnson?</p> <p>6 A So these samples are all from Imerys--</p> <p>7 Q Do you know that to be the case?</p> <p>8 A That was my understanding, that that was the case, and I</p> <p>9 see Exhibit No. 38, chromium, cobalt, and nickel in a</p> <p>10 Johnson & Johnson sample.</p> <p>11 Q Okay. Do you know-- can you say-- how do you know that</p> <p>12 that's a J&J sample?</p> <p>13 A This is what is stated by the expert witness, to my</p> <p>14 understanding.</p> <p>15 Q So you've done no independent work yourself to confirm</p> <p>16 what these are or what these samples are, correct?</p> <p>17 A That's correct.</p> <p>18 I am relying on this testimony.</p> <p>19 Q So you don't know if these were actually samples that</p> <p>20 went into a Johnson & Johnson bottle that reached a</p> <p>21 consumer, correct?</p> <p>22 MS. PARFITT: Objection; form.</p> <p>23 Q (By Ms. Erfle) You can answer.</p> <p>24 A Correct.</p> <p>25 Q And you don't know if any of these items listed in</p>

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<p style="text-align: center;">Page 302</p> <p>1 Exhibit No. 47 of Ms. Pier's exhibit-- Exhibit No. 47</p> <p>2 from Ms. Pier's prior testimony, if any of that actually</p> <p>3 went to a competitor or was a competitor's product not</p> <p>4 Imerys, correct?</p> <p>5 MS. PARFITT: Objection; form.</p> <p>6 THE WITNESS: Correct, I don't know</p> <p>7 from this data.</p> <p>8 Q (By Ms. Erfle) And you don't know from Exhibit No. 47</p> <p>9 from Ms. Pier's prior deposition, that you are looking at</p> <p>10 now, if any of that talc came from mines that were never</p> <p>11 actually used for Johnson & Johnson product, correct?</p> <p>12 MS. PARFITT: Objection; form.</p> <p>13 THE WITNESS: Well, this does state</p> <p>14 "Johnson & Johnson company" on two of the samples that</p> <p>15 have chromium, cobalt, and nickel.</p> <p>16 Q (By Ms. Erfle) But, again, you don't know if that</p> <p>17 actually ever reached into a product that became body</p> <p>18 powder from Johnson & Johnson that went to a consumer,</p> <p>19 correct?</p> <p>20 MS. PARFITT: Objection; form.</p> <p>21 THE WITNESS: Correct.</p> <p>22 (Exhibit No. 23 marked</p> <p>23 for identification.)</p> <p>24 Q (By Ms. Erfle) And just to make the record clear, let's</p> <p>25 put in as Exhibit No. 23 the Julie Pier document that you</p>	<p style="text-align: center;">Page 304</p> <p>1 A It should be, yes.</p> <p>2 (Exhibit No. 25 marked</p> <p>3 for identification.)</p> <p>4</p> <p>5 Q (By Ms. Erfle) Let's mark as Exhibit No. 25 this-- can</p> <p>6 you identify that for the record?</p> <p>7 A This is a copy of my report with notes on it.</p> <p>8 Yeah, it's a copy of my report, expert report, of</p> <p>9 November 16th, 2018.</p> <p>10 Q And it's the one with your handwritten notes?</p> <p>11 A Yes.</p> <p>12 Q Okay. One last question:</p> <p>13 Do you have an invoice that you've generated from</p> <p>14 December of 2018 through today, which is January 28th,</p> <p>15 2019?</p> <p>16 A Not yet.</p> <p>17 Q Okay. And once you generate that invoice, will you</p> <p>18 please give it to your counsel and make sure that they</p> <p>19 provide it to us?</p> <p>20 A Mm-hm.</p> <p>21 Q Is that a "yes"?</p> <p>22 A Yes. Yes.</p> <p>23 MS. ERFLE: Okay. That's all I have.</p> <p>24 MR. GOLOMB: How much time do you have</p> <p>25 left--</p>
<p style="text-align: center;">Page 303</p> <p>1 are looking at, so we make sure it's a little clearer.</p> <p>2 So all the questions I just asked you,</p> <p>3 Dr. McTiernan, about the Julie Pier Exhibit No. 47, it's</p> <p>4 also the same document as we've marked as Exhibit No. 23</p> <p>5 to your deposition, correct?</p> <p>6 A I can't read the whole thing, but it looks the same--</p> <p>7 it's the same number.</p> <p>8 Q I will represent to you that that's another copy of it,</p> <p>9 but it's marked as Exhibit No. 23 to this deposition,</p> <p>10 okay?</p> <p>11 A Okay.</p> <p>12 Q Are you okay with that?</p> <p>13 A Yes.</p> <p>14 (Exhibit No. 24 marked</p> <p>15 for identification.)</p> <p>16</p> <p>17 Q (By Ms. Erfle) Last thing I want to do is put in as</p> <p>18 Exhibit No. 24-- Dr. McTiernan, can you please look at</p> <p>19 that and identify that for the record, Exhibit No. 24?</p> <p>20 A These are invoices that I submitted to Ms. Parfitt's firm</p> <p>21 for work up until December 2018.</p> <p>22 Q Okay. So let's mark as Exhibit No.-- and are those a</p> <p>23 complete copy of all invoices that you would have</p> <p>24 incurred from the time you began your work on this</p> <p>25 litigation up until December of 2018?</p>	<p style="text-align: center;">Page 305</p> <p>1 MR. LOCKE: I don't think there's any</p> <p>2 more time.</p> <p>3 MR. GOLOMB: How much time is there on</p> <p>4 that disc?</p> <p>5 VIDEOGRAPHER: I have another like 15</p> <p>6 minutes.</p> <p>7 MS. PARFITT: Can we take a short</p> <p>8 break, and we'll come back?</p> <p>9 VIDEOGRAPHER: Okay. The time is 5:42</p> <p>10 p.m. We are going off the record.</p> <p>11 (Recess 5:42 to 5:50 p.m.)</p> <p>12</p> <p>13 VIDEOGRAPHER: We are back on the</p> <p>14 record. The time is 5:50 p.m. This is Media Unit No. 5.</p> <p>15</p> <p>16</p> <p>17 EXAMINATION</p> <p>18 BY MS. PARFITT:</p> <p>19 Q Dr. McTiernan, good evening. I just have a few questions</p> <p>20 for you for the Ladies and Gentlemen of the Jury.</p> <p>21 Dr. McTiernan, have you had an opportunity to review</p> <p>22 the Canadian draft screening assessment by Health Canada?</p> <p>23 A I did, yes.</p> <p>24 Q And have you had an opportunity to review the entire</p> <p>25 report?</p>

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<p>1 A Yes, I did.</p> <p>2 Q All right. And who sponsored that study?</p> <p>3 A It was Health Canada.</p> <p>4 (Exhibit No. 26 marked</p> <p>5 for identification.)</p> <p>6</p> <p>7 Q (By Ms. Parfitt) All right. I am going to have marked</p> <p>8 as Exhibit No. 26, Dr. McTiernan, a copy of just the</p> <p>9 draft screening assessment, dated December 2018, and,</p> <p>10 again, ask if you will identify that.</p> <p>11 A Yes, Exhibit No. 26.</p> <p>12 Q That is one of the documents you have reviewed?</p> <p>13 A Yes.</p> <p>14 Q Have you reviewed any other documents that are part of</p> <p>15 the Health Canada assessment of talc?</p> <p>16 A There was several other documents that were available.</p> <p>17 These were drafted by the Health Canada for</p> <p>18 information sheets for the public, and one that is called</p> <p>19 "Talc: potential risk of lung effects and ovarian</p> <p>20 cancer," another is a talc information sheet, a third is</p> <p>21 on talc, and, again it's also information for the public</p> <p>22 of how to minimize exposure, so they are already planning</p> <p>23 what the public health messages will be.</p> <p>24 One is a risk management scope, and this is to do</p> <p>25 with the regulatory decisions, and also the Canadian</p>	<p>1 talc can cause ovarian cancer.</p> <p>2 Q (By Ms. Parfitt) Specifically what are you referring to,</p> <p>3 if you will?</p> <p>4 A So on-- are there page numbers on here-- on Page 21 of</p> <p>5 the draft-- document called, "Draft screening</p> <p>6 assessment," in the fourth paragraph down, the third</p> <p>7 line, it says, "Further, available data are indicative of</p> <p>8 a causal effect."</p> <p>9 Another-- also, on Page 29, third paragraph down,</p> <p>10 states that "On the basis of information presented in</p> <p>11 this draft screening assessment, it is proposed to</p> <p>12 conclude that talc meets the criteria under Paragraph</p> <p>13 No. 64C of CEPA as it is entering or may enter the</p> <p>14 environment in a quantity or concentrations or under</p> <p>15 conditions that constitute or may constitute a danger in</p> <p>16 Canada to human life or health."</p> <p>17 Also in the beginning on Page Roman Numeral No. III,</p> <p>18 it states in the fifth paragraph, "The meta-analyses of</p> <p>19 the available human studies in the peer-reviewed</p> <p>20 literature indicate a consistent and statistically</p> <p>21 significant positive association between perineal</p> <p>22 exposure to talc and ovarian cancer. Further, available</p> <p>23 data are indicative of a causal effect."</p> <p>24 Q Dr. McTiernan, from reviewing the draft screening</p> <p>25 assessment performed by Health Canada, were you able to</p>
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<p>1 weight of evidence general principles and current</p> <p>2 applications at Health Canada.</p> <p>3 Q Now--</p> <p>4 MR. LOCKE: Objection; nonresponsive,</p> <p>5 move to strike.</p> <p>6 Q (By Ms. Parfitt) Dr. McTiernan, the information from</p> <p>7 Health Canada was made available to you, I believe you</p> <p>8 testified, after your report was submitted in November</p> <p>9 2018; is that correct?</p> <p>10 A That's correct.</p> <p>11 Q All right. And the date, again, of the Health Canada</p> <p>12 assessment was December 2018, correct?</p> <p>13 A Yes, correct.</p> <p>14 Q So at the time you submitted your report in the</p> <p>15 multidistrict litigation, you did not have access to the</p> <p>16 Health Canada report, correct?</p> <p>17 A Correct.</p> <p>18 Q All right. Now, have you-- do you have an opinion, to a</p> <p>19 reasonable degree of scientific certainty, as to whether</p> <p>20 or not Health Canada has opined that talcum powder</p> <p>21 products can cause ovarian cancer?</p> <p>22 MR. WILLIAMS: Objection; lacks</p> <p>23 foundation, calls for speculation.</p> <p>24 THE WITNESS: Health Canada does, in</p> <p>25 several places, firmly state that talcum powder-- that</p>	<p>1 determine whether or not they did indeed perform a</p> <p>2 causality assessment?</p> <p>3 MR. WILLIAMS: Lacks foundation, calls</p> <p>4 for speculation.</p> <p>5 THE WITNESS: They did do a full</p> <p>6 causal analysis that includes information from</p> <p>7 toxicology, animal studies of the biologic information,</p> <p>8 perineal exposure to talc, and then the human studies.</p> <p>9 I am looking for where they did their full</p> <p>10 causation.</p> <p>11 So they then determined characteristic of risk to</p> <p>12 human health, and then came up with their conclusions</p> <p>13 about what-- that further available data are indicative</p> <p>14 of a causal effect.</p> <p>15 Q (By Ms. Parfitt) What methodology did they employ?</p> <p>16 A They did methodology that was similar to what I did for</p> <p>17 my report.</p> <p>18 They reviewed the epidemiologic data from a</p> <p>19 meta-analysis.</p> <p>20 They reviewed the data-- the literature on animal</p> <p>21 studies.</p> <p>22 They reviewed toxicology.</p> <p>23 They reviewed information in how talc can be-- can</p> <p>24 reach the ovary areas, and from that came up with their</p> <p>25 conclusions.</p>

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<p>1 Q Was part of the Health Canada causality assessment a</p> <p>2 study by the name of Tair (phonetic)?</p> <p>3 A Yes. That was the meta-analysis that they reviewed.</p> <p>4 Q Okay. And that was just one part--</p> <p>5 A That was the primary meta-analyses-- the most recent</p> <p>6 meta-analysis that I reviewed.</p> <p>7 Q And that was just one part of the Health Canada</p> <p>8 assessment; is that correct?</p> <p>9 A Exactly.</p> <p>10 Q Dr. McTiernan, you were asked by counsel for J&J whether</p> <p>11 or not it would be repugnant for a company to test their</p> <p>12 talcum powder products for asbestos.</p> <p>13 Do you remember that question?</p> <p>14 A I believe the question was posed-- I would have to review</p> <p>15 the question again.</p> <p>16 I believe there was something about brakes and</p> <p>17 another--</p> <p>18 Q Let me just--</p> <p>19 A I think the category was talcum testing for asbestos.</p> <p>20 Q I believe the question was whether-- first, whether it</p> <p>21 was repugnant for a company to test for asbestos, whether</p> <p>22 J&J would be repugnant for them to test-- to actually do</p> <p>23 testing of their product.</p> <p>24 Do you recall that?</p> <p>25 A Yes.</p>	<p>1 VIDEOGRAPHER: This marks the end of</p> <p>2 today's video deposition. The time is 5:59 p.m.</p> <p>3 (Deposition concluded at 5:59 p.m.)</p> <p>4 (Signature reserved.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
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<p>1 Q And he then asked you whether it was repugnant if a brake</p> <p>2 company also tested to determine whether or not their</p> <p>3 products' brakes failed.</p> <p>4 Do you remember that?</p> <p>5 A Yes.</p> <p>6 Q In your opinion would it be repugnant for a company, if</p> <p>7 they found that the brakes had failed, to not inform the</p> <p>8 public?</p> <p>9 A Yes.</p> <p>10 MR. WILLIAMS: Incomplete</p> <p>11 hypothetical.</p> <p>12 MR. LOCKE: Just note my objection.</p> <p>13 Q (By Ms. Parfitt) Similarly, would it be repugnant of a</p> <p>14 manufacturing company or a supplier who tested their</p> <p>15 product and found asbestos to not warn or communicate</p> <p>16 with the public and the medical and scientific field</p> <p>17 about the fact that their product had asbestos?</p> <p>18 MR. WILLIAMS: Same objection.</p> <p>19 MS. ERFLE: Objection; also lacks</p> <p>20 foundation.</p> <p>21 THE WITNESS: Yes.</p> <p>22 MS. PARFITT: I have no further</p> <p>23 questions, Dr. McTiernan. Thank you.</p> <p>24 MR. WILLIAMS: I think that's it--</p> <p>25 actually-- that's fine.</p>	<p>1 STATE OF WASHINGTON) I, Terilynn Simons, CCR, RMR, CRR</p> <p>2) ss a certified court reporter</p> <p>3 County of Pierce) in the State of Washington, do</p> <p>4 hereby certify:</p> <p>5</p> <p>6 That the foregoing deposition of ANNE MCTIERNAN, PH.D.</p> <p>7 was taken before me and completed on January 28, 2019, and</p> <p>8 thereafter was transcribed under my direction; that the</p> <p>9 deposition is a full, true and complete transcript of the</p> <p>10 testimony of said witness, including all questions, answers,</p> <p>11 objections, motions and exceptions;</p> <p>12 That the witness, before examination, was by me duly</p> <p>13 sworn to testify the truth, the whole truth, and nothing but</p> <p>14 the truth, and that the witness reserved the right of</p> <p>15 signature;</p> <p>16</p> <p>17 That I am not a relative, employee, attorney or counsel</p> <p>18 of any party to this action or relative or employee of any</p> <p>19 such attorney or counsel and that I am not financially</p> <p>20 interested in the said action or the outcome thereof;</p> <p>21 That I am herewith securely sealing the said deposition</p> <p>22 and promptly delivering the same to Bart H. Williams.</p> <p>23</p> <p>24 IN WITNESS WHEREOF, I have hereunto set my signature on</p> <p>25 the 30th day of January, 2019.</p> <p>26</p> <p>27</p> <p>28</p> <p>29</p> <p>30</p> <p>31</p> <p>32</p> <p>33</p> <p>34</p> <p>35</p> <p>36</p> <p>37</p> <p>38</p> <p>39</p> <p>40</p> <p>41</p> <p>42</p> <p>43</p> <p>44</p> <p>45</p> <p>46</p> <p>47</p> <p>48</p> <p>49</p> <p>50</p> <p>51</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> <p>61</p> <p>62</p> <p>63</p> <p>64</p> <p>65</p> <p>66</p> <p>67</p> <p>68</p> <p>69</p> <p>70</p> <p>71</p> <p>72</p> <p>73</p> <p>74</p> <p>75</p> <p>76</p> <p>77</p> <p>78</p> <p>79</p> <p>80</p> <p>81</p> <p>82</p> <p>83</p> <p>84</p> <p>85</p> <p>86</p> <p>87</p> <p>88</p> <p>89</p> <p>90</p> <p>91</p> <p>92</p> <p>93</p> <p>94</p> <p>95</p> <p>96</p> <p>97</p> <p>98</p> <p>99</p> <p>100</p> <p>101</p> <p>102</p> <p>103</p> <p>104</p> <p>105</p> <p>106</p> <p>107</p> <p>108</p> <p>109</p> <p>110</p> 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Anne McTiernan, Ph.D

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<p>1 ACKNOWLEDGMENT OF DEPONENT</p> <p>2</p> <p>3 I, _____, do</p> <p>4 hereby certify that I have read the</p> <p>5 foregoing pages, and that the same</p> <p>6 is a correct transcription of the answers</p> <p>7 given by me to the questions therein</p> <p>8 propounded, except for the corrections or</p> <p>9 changes in form or substance, if any,</p> <p>10 noted in the attached Errata Sheet.</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15 _____ ANNE MCTIERNAN, PH.D. DATE</p> <p>16</p> <p>17 Subscribed and sworn</p> <p>18 to before me this</p> <p>19 _____ day of _____, 20____.</p> <p>20</p> <p>21 My commission expires: _____</p> <p>22</p> <p>23 _____ Notary Public</p> <p>24</p> <p>25</p>	

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